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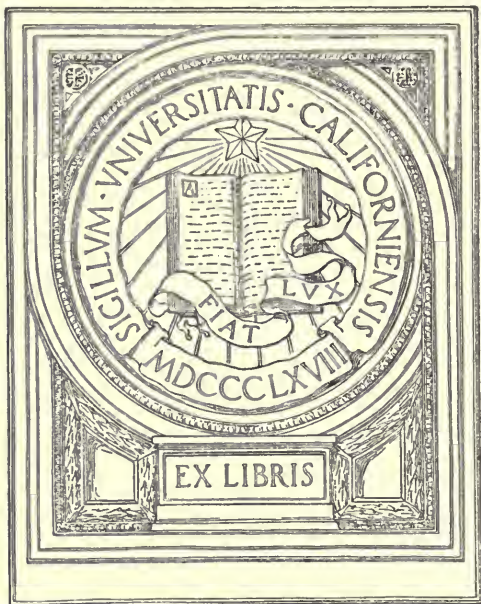
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MANUAL FOR MEDICAL OFFICERS

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MANUAL FOR MEDICAL OFFICERS

*Being a Guide to the Duties of Army
Medical Officers*

BY

LIEUT.-COLONEL FRANK T. WOODBURY, Medical Corps

COLONEL JAS. A. MOSS, Infantry

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FRANK T. WOODBURY

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CHAPTER I

SUGGESTIONS TO NEWLY APPOINTED MEDICAL OFFICERS

1. **Reporting for duty.** Upon arriving at your station look up the adjutant at once. If he is not at his office, go to his quarters. If at his office, he will announce and present you to the commanding officer; if at his quarters, he will advise you as to the best hour to call on the commanding officer and, in most cases, will accompany you.

2. **Calling on the commanding officer.** You are required by the Army Regulations to make both an official and a call of courtesy upon the commanding officer as soon as practicable. Should you reach your station during office hours the official call is, of course, made at once, immediately after you have reported to the adjutant. Should you reach your post after office hours, but in time to make an evening call, you should call upon the commanding officer at his quarters that evening, reporting to him officially at his office the following morning.

Whether a married officer reporting at a post with his family should be accompanied by his wife and the adult members of his family in making his first call of courtesy upon the commanding officer, is, of course, a matter that each one must decide for himself. It is thought, however, that if the wife of the commanding officer be an elderly lady, and particularly if the commanding officer himself is a man much your senior in rank and in age, it would be but an act of courtesy for your wife and the adult members of your family to accompany you as a mark of deference to the age and position of the commanding officer and his wife.

3. **Calling on intermediate commander.** After reporting officially to the commanding officer, you are required to report as soon as practicable to your intermediate commander, that is, the senior medical officer at the station.

4. **Uniform worn in reporting.** The Uniform Regulations prescribe that officers reporting for duty shall wear the uniform of the command, with sidearms.

According to the Uniform Regulations, the normal habitual uniform between reveille and retreat is either the cotton or the woolen olive drab, the former during the warm season and the latter during the cold season.

In making your social calls you should wear the proper uniform, as prescribed in the Uniform Regulations.

In order that there may be no doubt about your reporting for duty in proper uniform, it is suggested that you carry your uniform in your dress suit case and also have with you your saber.

If, through some unavoidable cause, you are unable to report in uniform, with sidearms, be sure to explain to the commanding officer immediately upon entering his presence why it is you are not in proper uniform.

(NOTE. During the continuance of war conditions the service uniform is prescribed for all occasions, except as indicated to the contrary in the Uniform Regulations for wear at the White House. The service uniform will be worn by all officers on active duty at all times. Department commanders in the tropics may in their discretion authorize the use of white mess jacket and white uniform. G. O. 63, W. D., May 15, 17.)

5. Application for quarters. Ascertain from the quartermaster what quarters are available for assignment to you, and then submit a written application of this tenor:

Fort Missoula, Mont.,
March 12, 1917.

From: 1st Lieut. John A. Smith, Med. Dept.
To: Commanding Officer.
Subject: Assignment of quarters.

1. I would request that quarters No.—be assigned to me.
2. A copy of the order assigning me to duty at this station is inclosed.

JOHN A. SMITH.

6. Calling. It is the custom for all officers to call upon you within a few days after your arrival. Be sure to keep track of these calls and return them within a week. You cannot be too careful about this matter, for it is one concerning which most officers are sticklers.

Not only does promptness in making and returning calls save time and trouble, but it also produces a good impression.

In large posts especially it is not expected, nor is it desirable, that officers should regularly exchange calls with everyone, but the younger officers should call on the field officers at least once every six months.

*** 7. Social "Customs of the Service."** You cannot observe with too much care the social customs of the service, the customs that are so essential to the good fellowship, and contentment, harmony, and happiness of the garrison.

(NOTE. The subject of the social and official customs of the service are fully covered in "Officers' Manual," which also contains much other information that is invaluable to officers just joining the service. It is recommended that every newly appointed medical officer get a copy of this Manual. Published by Geo. Banta Publishing Co., Menasha, Wis., \$2.50.)

8. War Department publications. One copy of each of the War Department publications named in the letter below, and which every medical officer should have for his official use, will be furnished gratuitously upon application to The Adjutant General of the Army, War Department, Washington, D. C.

[MODEL LETTER]

Plattsburg Barracks, N. Y.,
March 12, 1917.

From: 1st Lieut. John A. Smith, M. R. C.,
To: The Adjutant General.
Subject: War Department publications.

I would request the following named books for my official use:—

- 1 Army Regulations.
- 1 Manual for Medical Department.
- 1 Uniform Regulations.
- 1 Field Service Regulations.
- 1 Manual for Courts-Martial.
- 1 Rules of Land Warfare.
- 1 Drill Regulations for Sanitary Troops.
- 1 Tables of Organization.
- 1 Compilation of War Department General Orders, Circulars and Bulletins.

JOHN A. SMITH.

9. Army Regulation paragraphs. Read carefully the following paragraphs of the Army Regulations which are especially applicable to newly appointed medical officers: 1-5; 49-75; 87; 104-105; 126; 132; 162-167; 204; 206; 377-392; 464-470; 657-662; 674-678; 682-692; 710-726; 775-790; 807-810; 829; 834-839; 840-871; 925; 1080-1081; 1273; 1279-1280; 1296; 1386-1492; 1520.

(NOTE: "Extracts from Army Regulations" not only gives all the paragraphs that an officer just entering the service should read, but it also contains a list of questions bringing out and emphasizing every point mentioned in every paragraph. Published by Geo. Banta Publishing Co., Menasha, Wis., \$1.50.)

10. War Department orders. Medical officers should be thoroughly conversant with the War Department general orders given in the paragraphs that follow.

11. Fit of shoes and care of feet of enlisted men. With a view to increasing the marching capacity of troops, company commanders will personally measure the feet and fit the shoes of men of their commands and will be held responsible that the instructions herein contained are strictly followed.

All measurements prescribed herein will be taken with the soldier standing in bare feet and with a 40-pound burden on his back, bearing the entire weight upon the foot to be measured. Balance may be preserved by resting the hand on a fixed object. The measurements of the foot, which must be taken to make suitable preliminary selection of the shoe to try on, are (a) the length; (b), the circumference around the ball.

To measure the length the soldier will stand with foot upon the foot measure, furnished by the Quartermaster's Department, fitted in a slot in a board, the heel of the soldier fitting snugly against the heel block. The movable block will then be pushed up until it touches the end of the great toe. The scale on the top of the measure, which is graduated in sizes, will then be read, and the proper

11 (contd.)

length of the shoe will be determined, approximately by adding 2 to the reading of the scale; thus, if the soldier's foot scales $6\frac{1}{2}$, a shoe not smaller than $8\frac{1}{2}$ should be tried on first.

To take the ball measure, pass the foot tape, supplied by the Quartermaster's Department, around the foot at the prominent tubercle at the base of the great toe and the prominent tubercle at the base of the little toe. The position of the tape is shown by the line A-B in the diagram below:

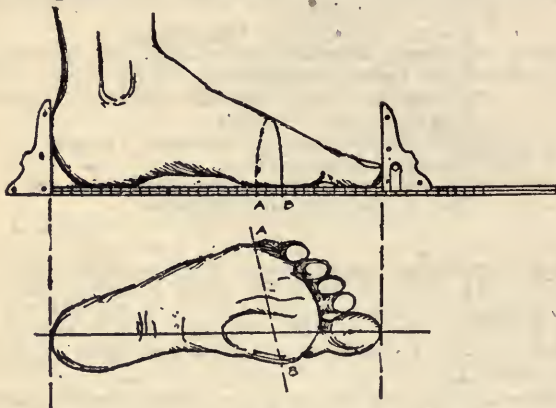


FIG. 1

The tape should lie closely to the flesh, but should not be so tight as to compress it. Having taken the foregoing measurements, the shoe best suited to the foot will be determined by reference to G. O. 22, 1915. For example, assume that the circumference of the ball is found to be $9\frac{1}{4}$ inches. In the table on page 28 of the aforesaid circular, under the heading "Marching shoes," it will be seen that for a foot requiring an $8\frac{1}{2}$ shoe a ball measurement of $9\frac{1}{4}$ inches corresponds to a D width. The size of shoe to try on for actual fitting is, then, in this case, $8\frac{1}{2}$ D.

If the ball measurement found as above does not correspond exactly with any ball measurement given in the table, then the narrower of the two widths between which the measurement lies should be selected.

Beginning with the size and width thus tentatively selected, shoes will be tried on until a satisfactory fit is secured. Correct fit in waist and instep will be determined experimentally. To determine the fact of fit the shoe will be laced snugly and the soldier with a 40-pound burden upon his back will again throw his entire weight on one foot. The officer will then press in the leather of the shoe in front of the toes to determine the existence of sufficient vacant space in that region to prevent toe injury. Under no circumstances should this

vacant space in front of the great toe be less than two-thirds inch; nor should there be pressure on the top of the toes. The officer will then grasp with his hand the leather of the shoe over the ball. As his fingers and thumb are brought slowly together over the leather, the shoe should feel snugly filled without apparent tension, while the leather should lie smoothly under the hand. If the leather wrinkles under the grasp of the hand, the shoe is too wide and a narrower width is needed; if the leather seems tense and bulging and the hand tends to slip over easily, the shoe is too narrow and a greater width is necessary.

It may be necessary to try on several pairs of shoes in this manner before an entirely satisfactory shoe is secured. A record of the proper size and width of shoes as determined above will be kept as provided by paragraph 37, Uniform Regulations.

Measurements will be taken and shoes will be fitted as prescribed at least once in each enlistment and the record will be changed from time to time, if subsequent fittings render a change necessary.

Sizes called for in requisitions will conform to the record and the fact of fit of shoes issued on such requisitions will be personally verified in every instance by company commanders in the manner above prescribed.

No shoes will be issued to or worn by enlisted men while on duty which are not fitted in accordance with this order.

New shoes should be adapted to the contours of the feet as soon as possible. Shoe stretchers, with adjustable knobs, to take pressure off painful corns and bunions, are issued by the Quartermaster's Department.

All shoes should be properly broken in before beginning a march, but if this is impracticable then the following is suggested but not required:

The soldier stands in his new shoes in about $2\frac{1}{2}$ inches of water for about five minutes until the leather is thoroughly pliable and moist; he should then walk for about an hour on a level surface, letting the shoes dry on his feet, to the irregularities of which the leather is thus molded in the same way as it was previously molded over the shoe last. On taking the shoes off a very little neat's-foot oil should be rubbed into the leather to prevent its hardening and cracking.

If it is desired to waterproof the shoes at any time, a considerable amount of neat's-foot oil should be rubbed into the leather.

Light woolen or heavy woolen stockings will habitually be worn for marching, but commanding officers of organizations may authorize the wearing of cotton stockings in individual cases where the surgeon certifies to the fact that the wearing of such stockings subserves the best interests of the service. The stockings will be large enough to permit free movement of the toes, but not so loose as to permit of wrinkling. Darned stockings, or stockings with holes, will not be worn in marching.

Company commanders, by frequent inspections throughout the year, will maintain the feet of their men in condition for proper march-

ing. They will cause the proper trimming of nails, removal, or pairing of corns and callouses, relief of painful bunions, treatment of ingrowing nails, and other defects, sending serious cases to the surgeon.

Before a march is undertaken by foot troops, company commanders will personally inspect the bare feet of their men. While on the march, they will personally see each day that their men wash their feet as soon as possible after reaching camp, prick and evacuate blisters, and cover such blisters or excoriations with zinc oxide plaster, supplied by the Medical Department, applied hot, dust the feet with the foot powder supplied by the Medical Department, and put on clean socks. Hereafter an undue amount of foot injury and disability from shoes will be regarded as evidence of inefficiency on the part of the officers concerned and as causes for investigation.

Post quartermasters will provide a place in the quartermaster's storehouse where shoes may be fitted for the purpose of determining or verifying the record required by paragraph 37, Uniform Regulations. For the purpose of fitting they will keep on hand at all times a complete series of each size and width of shoes furnished for issue. Shoes of this series will be put in stock and issued before they become unserviceable, and will be replaced by new shoes, keeping the series always complete. Company commanders will report in writing to the post commander every instance of failure to secure proper shoes for their commands or to obtain proper facilities for fitting the shoes as herein directed. Post commanders will investigate the reasons for and be held responsible as far as lies in their power for the rectification of such deficiencies.

A brief record of the number of such reports from company commanders and the reason for such deficiencies will be furnished to inspectors at each inspection of the post.

Inspections conducted under the provisions of paragraph 889, Army Regulations, will embrace an inquiry into the matter in which this order has been complied with, and the report of inspections will include a statement of all instances of failure on the part of company commanders to secure proper shoes for their commands and the cause of such failure. (Par. 1, G. O. 26/12; Par. IV, G. O. 30/13.)

12. Prevention and detection of venereal diseases among enlisted men. 1. It is enjoined upon all officers serving with troops to do their utmost to encourage healthful exercises and physical recreation and to supply opportunities for cleanly social and interesting mental occupations for the men under their command; to take advantage of favorable opportunities to point out, particularly to the younger men, the inevitable misery and disaster which follow upon intemperance and moral uncleanness, and that venereal disease, which is almost sure to follow licentious living, is never a trivial affair. Although the chief obligation and responsibility for the instruction of soldiers in these matters rests upon company officers, the medical officers should coöperate by occasional lectures or other instruction upon the subject of sexual physiology and hygiene and the dangers of venereal infection.

2. Commanding officers will require that men who expose themselves to the danger of contracting venereal disease shall at once upon their return to camp or garrison report to the hospital or dispensary for the application of such cleansing and prophylaxis as may be prescribed by the Surgeon General. Any soldier who fails to comply with such instructions shall be brought to trial by court-martial for neglect of duty.

3. Commanding officers will require a medical officer, accompanied by the company or detachment commander, to make a thorough physical inspection twice in each month of all the enlisted men (except married men of good character) of each organization belonging to or attached to the command. These inspections will be made at times not known beforehand to the men and preferably immediately after a formation. The dates on which the physical inspections of the various organizations are made will be noted on the monthly sanitary reports.

At these inspections a careful examination of the feet and footwear and of the condition of personal cleanliness of the men will be made, as well as careful observation for the detection of venereal diseases.

Cases of the latter will be promptly subjected to treatment, but not necessarily excused from duty unless, in the opinion of the surgeon, deemed desirable. They will be made of record in the medical reports in any case. A list of those diseased but doing duty will be kept both by the company or detachment commander and the surgeon, and the infected men will be required to report to a medical officer for systematic treatment until cured. While in the infectious stages the men should be confined strictly to the limits of the post. When a venereal case, whether or not on sick report, is transferred to another command, the surgeon will send a transfer slip giving a brief history of the case.

4. All instructions from the War Department prohibiting the publication in printed or other orders, or instructions prescribing examinations having in view the detection of venereal diseases among enlisted men, heretofore issued, are recalled. (G. O. 17/12, amended by Par. III, G. O. 71/13.)

13. Absence from duty on account of disease resulting from intemperate use of drugs, liquors, or other misconduct. 1. The law provides that no officer or enlisted man in active service, who shall be absent from duty on account of disease resulting from his own intemperate use of drugs, or alcoholic liquors, or other misconduct, shall receive pay for the period of such absence from any part of the appropriation in this act for the pay of officers or enlisted men, the time so absent and the cause thereof to be ascertained under such procedure and regulations as may be prescribed by the Secretary of War.

2. Absence from duty because of the intemperate use of drugs or alcoholic liquors, or because of incapacity resulting from venereal diseases not contracted in line of duty, is within the purview of the statute quoted above, and any officer or enlisted man who is absent

from duty for any such cause or causes is not entitled to pay, as distinguished from allowances, for the period of such absence.

3. Whenever an officer or enlisted man is absent from duty due to causes within the purview of the statute quoted above, the company commander will state in the "Daily Sick Report" his opinion to that effect by noting "No; G. O. 31, 1912," in the column headed "In line of duty" of the "Company Officer's Report," and the surgeon will in like manner record his opinion in the column "In line of duty" of the "Medical Officer's Report." Notice that such an entry has been made will at once be brought to the attention of the officer or enlisted man concerned by the company commander.

When the company commander and the surgeon are in accord, the finding if approved by the commanding officer, shall be final. Should the company commander and the surgeon disagree, or should the commanding officer dissent, the latter will call a board of officers of not less than two members, one of whom shall be a medical officer, to report upon and make recommendations in the case. Approval by the commanding officer of the findings of this board shall be final; but if the commanding officer disapprove the findings of the board the proceedings will be forwarded for the action of the next higher authority.

In the case of a company commander, or of an officer or enlisted man not carried upon the rolls of a company, the duties hereinbefore required of the company commander will be performed by the next superior officer under whose command or direction the officer or enlisted man concerned may be serving.

The terms "company" and "company commander" will be understood as including a troop, battery, band, or detachment, and the commanding officer thereof.

4. When it has been determined in the manner hereinbefore prescribed that an officer has been absent from duty due to causes within the purview of the statute quoted above, the proper commanding officer will forward to the department commander a report showing the inclusive dates of the absence and the cause thereof. This report will be forwarded to The Adjutant General of the Army for transmission to the Quartermaster General, who will take the necessary action looking to stoppage of pay for the period of absence from duty. In cases arising in the Philippine Department, the department commander, at the time of the sending of the original report to The Adjutant General, will transmit a copy thereof to the department quartermaster, Philippine Department, who will take the necessary action toward securing the proper stoppage of pay.

When it has been determined in the manner hereinbefore prescribed that an enlisted man has been absent from duty due to causes within the purview of the statute quoted above, the proper commanding officer will take notation to that effect on the pay rolls, or on final statements, giving the inclusive dates of the absence, and the quartermaster will make deduction of pay for such period. If it is impracticable to determine within the month in which the absence from duty occurs

that such absence was due to causes which should deprive the soldier of his pay, he will not be permitted to draw pay for that or any subsequent month until the cause of the absence from duty has been determined.

When cases marked not in line of duty are transferred to a general, division, or district hospital, and the commanding officer of such hospital shall have reason to doubt the justice of the notation, he will report the matter to the department commander, who will call a board of three medical officers to consider and determine whether the disease was incurred in line of duty or not. The proceedings of the board, with all the papers in the case, will be forwarded to the department commander for final decision. Similar action will be taken when a patient from a post enters a general, division, or district hospital and the surgeon of such hospital is the first medical officer to express an opinion and he and the company commander are not in accord as to the finding. (G. O. 13/12; Par. 1, G. O. 13/13.)

14. Service and professional publications. Subscribe to The Military Surgeon, Washington, D. C., and to the Journal of the Royal Army Medical Corps, London, England. Also, subscribe to either the Army and Navy Journal, 20 Vesey St., New York; or the Army and Navy Register, Washington, D. C.

The reading of these service and professional publications will enable you to keep posted on the best current thought and ideas in the Army. It will also enable you to see what your brother officers are doing and will keep you in touch with the personnel of the service.

15. Relations with immediate commander. Remember that in your relations with your immediate commander, that is, the medical officer under whose immediate directions you are serving, he must be kept informed of the treatment of all patients, especially officers. You should consult freely with him; for, in Army practice, there are always military as well as professional aspects to be considered.

16. Talking shop. Avoid talking shop. It is always considered bad form, especially in the Army, to discuss ailments and other matters pertaining to patients, and to criticize the professional conduct of other physicians.

CHAPTER II

PERSONNEL OF THE MEDICAL DEPARTMENT

17. Composition. The personnel of the Medical Department is known collectively as Sanitary Troops, and consists of—

- (a) The Surgeon General, who is Chief of the Medical Department.
- (b) The Medical Corps.
- (c) The Dental Corps.
- (d) The Veterinary Corps.
- (e) The Medical Department Officers' Reserve Corps.
- (f) The Enlisted Force.
- (g) The Nurse Corps.
- (h) Civilians employed in the Medical Department in various capacities.
- (i) The Medical Department personnel of the National Guard when ordered into the Federal service.
- (j) The personnel of the American Red Cross when in the Federal service.
- (k) The Sanitary Corps.

THE MEDICAL CORPS

18. Composition. The Medical Corps consists of the medical officers of the Regular Army, the maximum number being approximately equal to, but not exceeding, 7 for every 1000 of the total enlisted strength of the Regular Army. (Bulletin 16, 1916.)

Retired medical officers may, with their consent, be ordered on active duty.

19. Appointment in Medical Corps. Appointment in the Medical Corps depends upon eligibility determined by a preliminary examination, a course of instruction at the Army Medical School (Washington, D. C.), and a final examination.

20. Qualifications for the preliminary examination. To be qualified for the preliminary examination the applicant must be a citizen of the United States, between 22 and 32 years of age, a graduate of a reputable medical school, and must have had at least one year's hospital training, including practical experience in the practice of medicine, surgery and obstetrics.

21. The Preliminary examination. The preliminary examination consists of—

- (a) *Physical examination.* The physical examination conforms in all respects to that required of candidates from civil life for commission

in the line of the army, except in respect to vision, the minimum requirements of which are fixed from time to time in general orders.

(b) *General education.* This examination may be omitted at the discretion of the Surgeon General in the case of applicants holding diplomas or certificates from reputable literary or scientific colleges, normal schools or high schools, or graduates of medical schools which require an entrance examination satisfactory to the Surgeon General. When held it covers mathematics (arithmetic, algebra, and plane geometry), geography, history (especially of the United States), general literature, Latin grammar, and the reading of easy Latin prose.

(c) *Professional education.* This is in the following subjects: Anatomy, physiology and histology, chemistry and physics, materia medica and therapeutics, surgery, practice of medicine, obstetrics and gynecology.

22. Course of instruction at Army Medical School (Washington, D. C.). Applicants who qualify in the preliminary examination are called, "Qualified candidates," and will be appointed to the Medical Reserve Corps with the rank of first lieutenant, and upon pledging themselves to accept a commission in the Medical Corps, if found qualified in the final examination, and to serve at least five years thereunder, unless sooner discharged, are ordered to the Army Medical School, Washington, D. C., for instruction as candidates for admission to the Medical Corps of the Army.

Qualified candidates ordered to the school receive the pay and allowances of a first lieutenant for the journey and while on duty at the school.

The curriculum and the general rules and regulations of the school are covered in pars. 136-145 Manual of the Medical Department.

23. Final examination for commission. The final examination of candidates who have graduated from the Army Medical School is held immediately after the close of the school term, and covers the following points: Physical qualifications, clinical skill and acumen, and general aptitude for the service.

24. Recommissioning medical officers formerly in the service. Former medical officers who left the service honorably, and who are qualified physically, morally and as to age and military fitness, may, with the authority of the President, be recommissioned in the service, taking rank at the foot of the grade held at time of separation from the Army.

PROMOTION

25. General rules. The following general rules govern promotion in the Medical Corps:

(1) Promotion is limited to officers holding permanent appointment in the Medical Corps.

(2) Subject to examination, it is made according to seniority to include the grade of colonel.

(3) Lieutenants are promoted to captain after five years' service.
(NOTE. Promotion to the grade of general officer is made by selection by the President.)

26. Failure on examination for promotion.

(a) *Officers below rank of major.* An officer below the rank of major who fails in his examination has the following alternatives:—

(1) If he fails physically from disability incurred in the line of duty, he will be promoted to the next grade and retired.

(2) If he fails physically from a disability not incurred in the line of duty, he will be wholly retired.

(3) If he fails mentally, his papers will be submitted to a board of review. If the board of review concur in the unfavorable finding, he will be honorably discharged with a year's pay. If the board of review disapprove the finding of the board, he will be promoted.

(b) *Officers above the rank of captain.* An officer above the rank of captain who fails in his examination has the following alternatives:—

(1) If he fails physically from a disability incurred in the line of duty he will be promoted to the next higher grade and retired.

(2) If he fails physically from a disability not incurred in the line of duty, he will be wholly retired.

(3) If he fails mentally, he shall be suspended from promotion for the period of one year, at the expiration of which time he will be reëxamined. (NOTE. During the period of suspension his right to promotion shall pass successively to such officers next below him in rank as may become eligible to promotion during that period.)

(4) If he qualifies on reëxamination, he will be promoted.

(5) If he fails physically on reëxamination, he will be retired or wholly retired as in (1) and (2) above.

(6) If he fails mentally, he will be retired without promotion.

27. Promotion dependent upon subsequent examination. When the exigencies of the service require an officer to be in a place where there is no examining board, the President is authorized to promote such officer subject to examination.

If the officer subsequently be found disqualified (after examination), he shall, upon the approval of the proceedings of the examining board, by the Secretary of War, be treated in the same manner as if he had been examined prior to promotion.

28. Promotion to vacancies created in time of war. Temporary vacancies in any grade up to and including colonel in the Medical Department, due to appointment of officers to commissions in the temporary forces, are filled by temporary promotions according to seniority in next lower grades.

29. Nature of examination for promotion. Examinations for promotion consist of a physical examination, a professional examination and an examination in general efficiency.

(a) *The physical examination.* See par. 302.

(b) *The professional examination.* The professional examination covers the following subjects:

(1) *First lieutenant to captain*

(a) Medical Department administration. *Oral.*

Army Regulations, so far as they relate to the Medical Department or to the medical officer as an officer of the Army; Manual

for the Medical Department; Drill Regulations and Outlines of First Aid for the Hospital Corps; Manual for Courts-Martial, so far as it relates to general and inferior courts-martial.

- (b) Hygiene, general and military. *Oral.**
- (c) Practice of medicine, including tropical diseases and recent progress in etiology, pathology, and therapeutics. *Oral.**
- (d) Surgery, including recent progress in etiology, pathology, therapeutics, and new operative procedures. *Oral.**
- (2) *Captain to major*
- (e) Organization and administration of medical service in war. *Oral.*

Army Regulations; Field Service Regulations, omitting Appendices Nos. 1, 4, 5, 6, 7, and 8. (The Appendices omitted, except Appendix 6, are for reference only; in an examination requiring the use of data contained in any one of them, either the textbook or the appropriate data will be furnished. The subject matter contained in Appendix No. 6 is also contained in the Rules of Land Warfare.) Rules of Land Warfare; Manual for the Medical Department; Medical Service in Campaign (*Straub*); A study in Troop Leading and Management of the Sanitary Service in War (*Morrison and Munson*); The Principles of Sanitary Tactics (*Munson*); Manual for Courts-Martial; International Agreements Controlling Medical Administration in Campaign (*Manual for the Medical Department, pars. 802, 803*).

- (f) Recent progress (last decade) in medicine, surgery, and hygiene. *Oral.*

Such books, periodicals, and journals as have been or may be issued from time to time by the Medical Department.

- (g) If desired by the candidate, an examination in one of the following optional subjects. *Oral.*

- (1) State medicine, including municipal sanitation, preventive medicine, the epidemiology of diseases, and hospital and barrack construction.
- (2) Operative general surgery.
- (3) Bacteriology (including the preparation and use of sera and vaccines); the zoölogy of human parasites and suctorial insects; clinical microscopy and pathology.
- (4) Ophthalmology, otology, laryngology, and rhinology.
- (5) Psychiatry and nervous diseases.
- (6) Gynecology, midwifery, and pediatrics.
- (7) The purchase, storage, and issue of medical supplies; the practical testing of the quality of drugs and other supplies; money disbursements; reports and returns and administrative methods of supply depots in peace and war.

The subject will be selected by the candidate, and the examination will, so far as possible, test his practical and theoretical knowledge of that subject. If an optional subject is selected, it will be given a

*Such books, periodicals, and journals as have been or may be issued from time to time by the Medical Department.

value equal to that assigned to each of the preceding lettered subjects. Upon the receipt of an order to report for examination for promotion to the grade of major, the candidate will at once inform the Surgeon General, in writing, of the optional subject, if any, selected for examination.

(3) *Major to Lieutenant Colonel*

(h) A Medico-Military Map Problem.

This problem will be so drawn as to test the candidate's ability to apply practically his knowledge of the duties of a division surgeon, including sanitation and preventive medicine, sanitary tactics, and the proper handling of the medical personnel of a division in actual campaign.

(4) *Lieutenant colonel to colonel*

(i) A Medico-Military Problem. This problem will be so drawn as to test the ability of the candidate to apply his knowledge in the practical solution of any of the large problems concerning organization, supply, sanitation, and other medico-military matters which may confront the chief surgeon of higher tactical units either at home or abroad.

(c) *General efficiency.* An examining board in determining the general efficiency of an officer for promotion may consider (1) the use the officer has made of his opportunities, (2) his ability to apply practically his professional knowledge, (3) his general trustworthiness and ability in the performance of his official duties, and (4) his ability to command troops or control men.

THE DENTAL CORPS

30. Composition. The Dental Corps of officers of the grades of first lieutenant, captain and major, the total number not exceeding 1 to every 1,000 of the enlisted strength of the Army.

Dental surgeons receive the rank, pay, and allowances of first lieutenants until they have completed 8 years' service. Those of more than 8 but less than 24 years' service have, subject to examination, the rank, pay and allowances of captain, and those of more than 24 years' service, subject to examination, have the rank, pay and allowances of major, the number of majors not exceeding 15.

31. Examination. The physical qualifications are the same as in the case of applicants for appointment in the Medical Corps.

The professional examination consists of oral and written questions and clinical work, particular stress being laid upon the practical examination. The oral examination includes oral surgery, operative dentistry and prosthetic dentistry. The subjects of the written examination are anatomy, physiology and histology; materia medica and therapeutics; dental pathology and bacteriology; chemistry, physics and metallurgy. The clinical examination is of such a character as to thoroughly test the candidate's practical knowledge of operative and prosthetic dentistry.

An average of 75% is required to qualify in the subjects of the written and oral examinations, and 85% in the practical examination.

32. Status. Dental surgeons have the same status as other commissioned officers of the same rank.

A dental surgeon is not a mounted officer.

33. Duties. The duties of dental surgeons are covered in pars. 1396-1403, Army Regulations.

34. Reports. Dental surgeons make the same personal reports as medical officers do.

THE VETERINARY CORPS

35. Composition. The Veterinary Corps consists of veterinarians, assistant veterinarians and Reserve veterinarians, in the following proportion:

Veterinarians and assistant veterinarians. Not to exceed 2 for each regiment of cavalry, 1 for every three batteries of field artillery, 1 for each mounted battalion of engineers, 17 as inspectors of horses and mules and as veterinarians in the Quartermaster Corps, and 7 as inspectors of meats for the Quartermaster Corps.

Reserve veterinarians. Such number as may be necessary to attend animals belonging to the Quartermaster Corps, for such time as their services may be required. They have the pay and allowances of second lieutenant.

36. Status. An assistant veterinarian has the rank, pay and allowances of first lieutenant for the first five years of service, the first two of which are probationary at the end of which time he must take an examination to determine his fitness to continue in the service. However, if his services are unsatisfactory, he may be discharged any time during the probationary period or at the end thereof.

After five years of service, assistant veterinarians have, subject to examination, the rank, pay and allowances of first lieutenant.

After fifteen years of service, assistant veterinarians are promoted, subject to examination, to the grade of veterinarian, with the rank, pay and allowances of captain, and after twenty years of service, they are promoted to the grade of major.

37. Duties. The duty of veterinarians consists in treating the sick and injured animals at their stations, including the private horses of mounted officers. They also instruct company horseshoers and farriers in the proper care of horses, and in the principles and practice of horseshoeing.

THE MEDICAL DEPARTMENT OFFICERS' RESERVE CORPS

38. Composition. The Medical Department Officers' Reserve Corps consist of—

- (a) The Medical Reserve Corps.
- (b) The Dental Reserve Corps.
- (c) The Veterinary Reserve Corps.

THE MEDICAL RESERVE CORPS

39. **Composition.** The number of officers in the Medical Reserve Corps is not limited, but the proportion, except in the case of first lieutenants, must not exceed the proportion for the same grade in the Medical Corps of the Regular Army. The number of first lieutenants is unlimited.

40. **Status.** The status of an officer of the Medical Reserve Corps may be any of those indicated below:

(a) *Reserve status.* While on this status officers have rank in the Medical Reserve Corps according to grades and length of service in their grades, but receive no pay and allowances.

(b) *Active service in time of peace.* While in active service they receive the pay and allowances of officers of corresponding rank and length of active service in the Regular Army.

(c) *Active service in time of war.* While on active duty in time of war, reserve officers exercise command appropriate to their grade and rank and are entitled to the pay and allowances of the corresponding grades in the Regular Army.

41. **Duties.** While in active service the duties of officers of the Medical Reserve Corps are the same as officers of the Medical Corps of the Regular Army of corresponding grades. Medical Reserve officers with special qualifications are given special assignments.

42. **Character and scope of examinations.** The character and scope of the examinations are such as to determine the applicant's physical and professional fitness for the duties he will be called upon to perform in time of war. The subjects in which examined are left to the discretion of the examining board.

THE DENTAL RESERVE CORPS

43. **Composition.** The Dental Reserve Corps consists of officers of the rank of first lieutenant, the number being unlimited.

The only way an officer of the Dental Reserve Corps can attain rank above the grade of first lieutenant is through active service for the time prescribed for the attainment of higher rank. (See par. 30.)

44. **Status.** When in active service the status of officers of the Dental Reserve Corps is the same as that of officers of the Dental Corps of the same rank.

45. **Character and scope of examination.** The character and scope of the examinations are such as to determine the applicant's physical and professional fitness for the duties he will be called upon to perform in time of war. The subjects in which examined are left to the discretion of the examining board.

VETERINARY RESERVE CORPS

46. **Composition.** The Veterinary Reserve Corps consists of assistant veterinarians with the rank of second lieutenant, the number being unlimited.

The only way a member of the Veterinary Reserve Corps can attain higher grades is through active service for the time prescribed for the attainment of higher grade (See par. 30.)

47. Status. When in active service the status of members of the Veterinary Reserve Corps is the same as members of the Veterinary Corps of the same grade.

48. Character and scope of examinations. The character and scope of the examinations are such as to determine the applicant's physical and professional fitness for the duties he will be called upon to perform in time of war. The subjects in which examined are left to the discretion of the examining board.

THE ENLISTED FORCE

49. Composition and strength. The enlisted force of the Medical Department consists of:—

(a) The enlisted personnel of the Medical Department of the Regular Army, the total number not to exceed, except in time of war 5% of the authorized enlisted strength of the Army.

(b) The enlisted men furloughed to the Regular Army Reserve from the Medical Department, and those enlisted in such Reserve for the Medical Department.

(c) The enlisted men of the medical section of the Enlisted Reserve Corps. Their number is not to exceed three times the number authorized for the corresponding grades of the Medical Department of the Regular Army, except that the number in the grade of private is not limited. They are enlisted for a period of four years, subject to a physical, educational and practical examination.

THE NURSE CORPS

50. Composition. The Nurse Corps (female) consists of one superintendent and as many chief nurses, nurses, and reserve nurses as may be needed. The reserve nurses are the enrolled nurses of the American National Red Cross Nursing Service, and who, in time of war or other emergency, may, with their consent, be assigned to active duty.

51. Appointment. Nurses are appointed from amongst the graduates of hospital training schools, subject to a satisfactory professional, moral, mental and physical examination.

CIVILIANS EMPLOYED IN THE MEDICAL DEPARTMENT IN VARIOUS CAPACITIES

52. Composition. The civilians employed in the Medical Department consist of contract surgeons, civilian physicians employed for special purposes, male and female nurses not in the Nurse Corps, and cooks and other civilians necessary for the proper care of the sick; also, depot and office employees.

53. Contract surgeons. A contract surgeon is a civilian physician employed under contract by the Surgeon General of the Army.

They are entitled to mileage, and when on duty at a post or station they are entitled to the quarters allowed by regulation to a first lieutenant, including heat and light.

THE MEDICAL DEPARTMENT PERSONNEL OF THE NATIONAL GUARD WHEN ORDERED INTO THE FEDERAL SERVICE

54. Transition from State to Federal control. When the national Guard is mustered into the Federal service, the medical commissioned and enlisted personnel form a part of the Medical Department of the Army of the United States.

THE PERSONNEL OF THE AMERICAN NATIONAL RED CROSS WHEN IN THE FEDERAL SERVICE

55. Military status of American National Red Cross. The American National Red Cross is now the only volunteer organization authorized by law to render aid to the military and naval forces of the United States. Any other society or organization desiring to render similar assistance can do so only through the American National Red Cross. Red Cross units serving with the Army constitute a part of the sanitary service thereof.

56. Classes of personnel. In time of war, or when war is impending, the American National Red Cross furnishes the following classes of personnel: Physicians and surgeons, dentists, pharmacists, nurses, nurses' aids, clerks, cooks and other hospital personnel, litter bearers, drivers, chauffeurs, and other transport personnel, and laborers.

56½. Composition. Commissioned officers of similar grades and in the same proportions as in the Medical Corps of the Regular Army, total not to exceed one for every thousand of the total strength of the military forces authorized by law from time to time; except that the highest grade in the Sanitary Corps is that of major, and such enlisted force as the Secretary of War may authorize.

(a) *Eligibility.* Officers of the Medical Reserve Corps will be assigned, or citizens who possess special skill in sanitation, in sanitary engineering, bacteriology, or other science related to sanitation, or who have any knowledge of special advantage to the Medical Department, will be appointed to the Medical Reserve Corps and transferred to the Sanitary Corps, fitness for assignment to be determined under regulations established by the Secretary of War.

CHAPTER III

ORGANIZATION AND EQUIPMENT

57. **Purpose of organization.** The personnel of the Medical Department is organized and equipped to function with the organization and tactical disposition of the Army for war; peace organization being only a modified and abnormal condition of service, which must be subordinated to war conditions, in all its phases.

58. **Basis of organization.** Organization for war calls for three phases of military activity with three different functions based upon three zones.

1. *The zone of the interior.* This is the territory within which recruiting organization training, equipment and supply take place and in which is situated the headquarters of the military forces of the government, the War Department, in other words *it is the United States.*

2. *The zone of the line of communications.* As the fighting troops move farther and farther from the zone of interior they have to create and maintain a system whereby a supply of men, munitions, food, clothing, etc., can be forwarded from the zone of the interior. This is the line of communications.

3. *The zone of advance.* This is the territory wherein active hostilities are expected to take place.

The zone of the line of communications plus the zone of the advance equal the theatre of operations.

59. Table of Organization Sanitary Troops.

Surgeon General	Theater of operations (chief surgeon, army corps)	Zone of the advance (division surgeons)	<p>Medical department personnel on duty with line organizations.</p> <p>Sanitary trains { Directors of ambulance companies } Camp infirmaries. Ambulance Companies.</p> <p>{ Directors of field hospitals } Field Hospitals</p>	
		Zone of the line of communications (surgeon, base group)	<p>Base section (surgeon, base group):</p> <p>Base medical supply depot.</p> <p>Base hospitals.</p> <p>Convalescent camps.</p> <p>Contagious disease hospitals.</p> <p>Trains, boats, and ships.</p> <p>Casual camps for sanitary troops.</p> <p>Sanitary squads.</p> <p>Field laboratories.</p> <p>American National Red Cross units.</p> <p>Sanitary inspectors.</p> <p>Intermediate section (surgeon, intermediate group):</p> <p>Rest stations.</p> <p>American National Red Cross units.</p> <p>Advance Section (surgeon, advance group):</p> <p>Advance medical supply depot.</p> <p>Sanitary column { Evacuation hospitals. Evacuation ambulance companies.</p>	Exist in time of war only
		Service of the interior	<p>Department surgeons.</p> <p>Department sanitary inspectors.</p> <p>Supt. medical service of transports.</p> <p>Post surgeons and post hospitals.</p> <p>Department hospitals.</p> <p>Medical supply depots.</p> <p>General hospitals.</p> <p>Medical service training and maneuver camps.</p> <p>Medical service concentration camps.</p> <p>Medical service mobilization camps.</p> <p>Camp hospitals.</p> <p>Convalescent camps.</p> <p>Hospitals ports of embarkation.</p> <p>Surgeons' ports of embarkation.</p> <p>Hospitals for prisoners of war.</p> <p>Hospital trains and trains for patients.</p> <p>Hospital ships and ships for patients.</p> <p>Rest stations.</p>	Exist only in time of war

I. THE ZONE OF THE INTERIOR

60. The Zone of the Interior. This is the theatre of creation and training of troops in peace and war and the place of reception of the disabled personnel of the Army in time of war.

In war and peace while troops may be tactically organized into divisions for service, the unit of administration is the Department, under the War Department, and the department chief surgeon is the head of the sanitary organizations and service in his department except those organizations specifically excepted in orders from his jurisdiction.

All organizations in the zone of the interior are maintained at peace strength until ordered for field service when they automatically increase to their authorized war strength, which is the normal organization.

61. Personnel in Garrisoned Posts. At every permanent military post there will be at least one noncommissioned officer of the Medical Department, at least four enlisted men of the Medical Department of the grades of cook, private, first class, and private; six when the strength of the garrison is 200; and two additional for every additional 100 of strength, an additional noncommissioned officer for every four enlisted men of the medical department of the grades of cook, private, first class, and private in excess of four. This personnel will be augmented in time of war as necessity requires.

When a regiment occupies a post the sanitary personnel will be that of the detachment authorized by the Table of organization as modified by existing emergency (viz., 5 Medical Officers, 15 noncommissioned officers and 28 men.)

62. Classification of Sanitary Personnel in garrison. (3 classes A. R. 1433, C. A. R. #8, 1914.)

1st class. Attached to combatant organizations.

2nd class. Assigned to units of the Divisional Sanitary train and administrative offices in the field.

3d class. Assigned to the service of the interior for service in war. This includes a minimum of trained men.

Assignment of Class 1. (A. R. 1435½, C. A. R. #8, 1914.) On receipt of orders directing a movement of troops of the mobile Army with attached sanitary personnel, the Medical Department personnel of class 1 attached to those troops, together with the drivers of ambulances and wagons attached, will report for duty to the organization commander, and, while absent, will be carried as on detached service, unless another status is specified in orders. When the troops again come under the jurisdiction of a post commander, the attached sanitary personnel will report to the surgeon of the post for garrison duty.

63. Equipment and supplies for garrisons. These are to be found listed in Post Supply Tables, Manual of the Medical Department.

64. Personnel stationed at general hospitals, arsenals, engineer stations, and independent posts. The number of enlisted personnel will be determined by the Surgeon General under the direction of the

Secretary of war. (A. R. 1418.) Cooks are authorized in the proportion of not to exceed 6 per cent of the total enlisted strength of the enlisted force, Medical Department. They will be authorized and assigned by the Surgeon General to hospitals and other sanitary formations where needed as are Noncommissioned Officers, Medical Department.

In general it is considered that one cook is sufficient for a mess of 50 persons or major fraction thereof.

MEDICAL DEPARTMENT TRANSPORTATION IN TIME OF PEACE

65. The sanitary combat train. (A pack mule to carry equipment for the regimental aid station.) These pack mules are provided in time of peace and are assigned to the organizations indicated in the Tables of Organization. They will be placed at the disposition of the surgeon when needed for drill of the Hospital Corps in packing, and will habitually accompany the combat train of the organizations to which they are assigned, both in peace and war.

66. Ambulances. Ambulances are vehicles provided for the service of the Medical Department. They will be furnished and repaired by the Quartermaster Corps. They will be used only for the following purposes: The transportation of the sick and wounded and the absolutely necessary nurses or attendants on duty therewith; the recreation of convalescent patients; the instruction of the Hospital Corps in the duties of the ambulance service; and in the field, in urgent cases, for the transportation of medical supplies. All persons are prohibited from using them, or requiring or permitting them to be used for any other purpose. In garrison, ambulances will always be subject to the call of the surgeon, and, in the field, to the call of the medical officer on whom responsibility for the transportation of the sick devolves. It shall be the duty of the officer in charge of ambulances to report to the commander of troops any violation of the above-mentioned provisions governing their use. When practicable, in garrison, they will be housed near the hospital.

67. Classification of ambulances. Ambulances complete will be issued and classed as follows:

1. For mobile army troops, to accompany troops in the field.
2. For post purposes exclusively, e. g., for Coast Artillery stations, recruit depots, certain mobile army stations which would require ambulance service after withdrawal of mobile army troops therefrom, military prisons, supply depots, etc. Department commanders will see that such of these posts as require ambulance service are provided with ambulances which do not belong to the divisional or other sanitary train of the mobile army.

3. For general hospitals and for reserve supply.

Ambulances under class 1 will be furnished in numbers prescribed for war basis in Tables of Organization; under classes 2 and 3 the number of ambulances to be supplied will be determined by the War Department on recommendation of the department commander as regards class 2, and of the Surgeon General, as regards class 3.

68. **Ambulances of class 1.** These are marked with the words "Sanitary Train———Division," and with the number of the ambulance company to which assigned. Ambulance companies operated in peace are equipped with their quota of ambulances, and the remaining ambulances of the divisional sanitary train are attached in time of peace to combatant organizations of the division by the department commander. Ambulances so attached are available for garrison service in peace when required, as well as ambulances of class 2, and will be cared for by ambulance drivers designated by the surgeon. When the division is assembled, these ambulances accompany the organization to which attached, join the companies to which they are assigned, and complete the ambulance equipment of the sanitary companies not operated in time of peace.

69. **Use of ambulances in garrison.** In garrison, when it is necessary to use the ambulance for any transportation purpose, the commanding officer, on the application of the surgeon, will see that the requisitè animals are provided by the quartermaster and placed at the disposal of the surgeon. At stations organized ambulance companies, class 2, ambulances may be used for garrison ambulance service or the ambulance company may furnish the garrison ambulance service, at the discretion of the post commander.

70. **Care of ambulances in garrison.** At each post one or more privates of the detachment Hospital Corps will be designated by the surgeon as ambulance driver only for ambulances not belonging to organized ambulance companies. In addition to his other duties he will care for the ambulance, its equipment, and harness, and see that they are ready for immediate use; and in the field he will care for the animals also.

71. **Wagons pertaining to the divisional sanitary train.** These will be marked with the words "Sanitary Train———Division" and the number of the company to which assigned. Companies belonging to the sanitary train which are operated in peace are equipped with their quota of wagons. In addition, wagons of the divisional sanitary train are attached to combatant organizations, as prescribed in Tables of Organization, for the transportation of the camp infirmary. When the division is assembled these wagons accompany the organizations to which attached and join the sanitary companies to which assigned.

72. **Other transportation furnished in war.** Hospital transports, boats, and railway trains, after being properly assigned as such, will be exclusively under the control of the Medical Department, and will not be diverted from their special purposes by the orders of local or department commanders or officers of other staff corps.

73. **Transportation temporarily assigned.** Transportation for the temporary use of the Medical Department, including wagon and railway trains, boats, etc., is reported by the officer in charge to the senior medical officer, under whose orders such transportation remains until the special work to which it was assigned is completed.

74. **Litters.** Each company will be furnished with one hand litter by the Medical Department. It will be kept ready for use at all times.

FIELD EQUIPMENT

75. **Kinds.** Field equipment consists of engineer, ordnance, signal, medical and quartermaster property.

76. **Classes.** It is divided into classes, A, B, and C.

Equipment A is the fighting equipment.

Equipment B is the equipment allowed in addition to equipment A, where it is possible to afford extra comfort in camps.

Equipment C is the total of equipment A and B.

77. **When used.** In field service, which is, service in mobilization, concentration, instruction or manœuvre camps, as well as a service in campaign, in simulated campaign or on the march.

78. **Equipment and personnel of office of Department of Surgeon.** Such as may be required.

MOBILIZATION AND CONCENTRATION CAMPS

79. **Personnel and Equipment.** The personnel and equipment of troops in the camp will be that required by their organizations. The equipment will be used for instruction purposes only. The medical service is performed by the camp hospital.

CAMP HOSPITALS

80. **Personnel.** A camp surgeon and such other personnel as may be required.

81. **Supplies and equipment.** The supplies and equipment of camp hospitals are furnished direct, without requisition, and may be those of a regimental or field hospital, increased by the list of articles enumerated in Par. 886, Medical Department Manual.

82. **General hospitals in Zone of Interior.** (Normal capacity 500 beds.)

(a) Personnel and equipment are to be found in Special Regulations for General Hospitals and in Par. 290, Manual Medical Department, et sequitur. Also see par. 96, 97, and 98, of the line of communication.

83. **Hospital Trains and Trains for Patients in Zone of Interior.** They are provided by the War Department, and when not available ordinary trains may be fitted up for temporary use of the Medical Department.

(a) *Composition and personnel.* Hospital trains made up of 10 cars, of which 8 are for patients (capacity 200), allowed, in accordance with Tables of Organization, a personnel of 3 medical officers (captains or lieutenants); 3 noncommissioned officers (1 sergeant first class, 2 sergeants); 2 acting cooks; 22 privates first class and privates (20 nurses, 2 orderlies).

84. **Hospital Ships and Ships for Patients.** These will be supplied by the War Department (capacity 200).

(a) *Personnel.* 5 Medical Officers (1 lieutenant colonel or major, 4 captains and lieutenants); 5 noncommissioned officers (1 sergeant first class, 4 sergeants); 5 acting cooks; 30 privates first class and privates (29 nurses, 1 orderly).

(b) *Equipment.* This will be determined according to the needs in each case under special instructions from the Surgeon General.

Litter fittings for the conversion of box cars for hospital purposes are supplied by the Medical Department. These fittings are so assembled as to provide transportation for 24 recumbent patients in each car.

85. The Army and Navy General Hospital (Hot Springs, Arkansas.) The organization consists of one medical officer of the Army, who shall command it, and such other medical officers of the Army and Navy as may be necessary, to be detailed by the Secretary of War or the Secretary of the Navy, respectively; one officer of the Quartermaster Corps or of the line of the Army as an acting assistant quartermaster, detailed by the Secretary of War; such noncommissioned officers and men of the Hospital Corps as may be authorized by the Secretary of War; and such civil employees as may be necessary for the proper service of the hospital. (Executive order of Aug. 25, 1892, G. O. 60, 1892.)

86. The American National Red Cross. The Red Cross personnel is divided into three classes:

Class A. Those willing to serve wherever needed.

Class B. Those willing to serve in the service in the interior only.

Class C. Those willing to serve at place of residence only.

Class A will be organized into sections and columns, uniformed and equipped as may be prescribed by the central committee of the Red Cross and approved by the War Department. Such organizations and equipped sections and columns will be trained for service at the bases and along the lines of communication of the forces in the field.

Class B will be trained for service in hospitals and other sanitary institutions that they may be established in the service of the interior. Individuals of this class may also be organized into sections and columns and uniformed and equipped as prescribed for class A.

Class C will be composed of individuals of local Red Cross Societies, who, on account of their occupation or experience in the care of such and other hospital duties, may be expected to render efficient service in the military sanitary institutions established in their locality.

(a) *Army rank and insignia of American Red Cross.* (G. O. 82, 1917.)

OFFICIALS

GRADE	TITLE	ASSIMILATED RANK	DUTIES
	Chairman central committee	Major general	Indicated by title.
	Chairman war council	Do	Do
	Members of war council.	Brigadier general	Do
	Vice chairman central committee	Do	Do
	Director general	Colonel	{ 1. In charge of civilian relief. 2. In charge of military relief.

OFFICIALS (contd.)

GRADE	TITLE	ASSIMILATED RANK	DUTIES
	Assistant director general	Lieutenant colonel	{ 1. Indicated by title. 2. Directors of certain bureaus. 3. Other duties of like importance
	Commissioner	Do	Commissioners to any theater of war as France, Italy, Russia, etc.
	Director	Major	{ 1. Directors of certain bureaus. 2. Representing American National Red Cross at Army or corps headquarters; at headquarters of line of communications or base abroad; or at a divisional camp or cantonment in the United States. 3. Base hospitals. 4. Supply depots. 5. Other duties of like importance.
	Assistant director Do	Captain First lieutenant	{ 1. Representing the American National Red Cross with any detachment of the Army less than above. 2. Storekeeper. 3. Assistant to any official of higher grade. 4. Adjutant or quartermaster of a base hospital. 5. Other duties of like importance.

Employees

Secretary Sergeant major Clerical

Red Cross Base Hospitals

Same grades as enlisted men of the Medical Department. Commissions, warrants and certificates of identity will be issued as given in G. O. 82, 1917.

(b) *Commissions and Warrants in American Red Cross*: Commissions are signed by the Secretary of War upon nomination by chairman of war council. Warrants are confirmed by properly designated officials of Red Cross.

(c) *Certificates of Identity*: These are furnished employees of grades 14-17 inclusive.

(d) *Authority*: These commissions, warrants, certificates of identity confer no military authority, right to pay or allowance or other incident attached to rank or office of similar grades of U. S. Army.

(e) *Insignia*: As insignia of title and other assimilated rank to the following distinctive marks are prescribed, to be worn as indicated:

(a) On cap, hat, or helmet.

Grades 1-7, inclusive: Greek cross in red enamel above the coat-of-arms of the United States in bronze metal.

Grades 8-17, inclusive: Greek cross in red enamel.

(b) On both sides of the collar of coat or shirt.

Grades 1-17, inclusive: The letters U. S. in bronze metal and Greek Cross in red enamel, placed as are the U. S. and corps insignia of officers of the Army.

(c) On both sleeves of coat or shirt, midway between elbow and the end of sleeve.

Grade 1: Horizontal band of blue cloth, three-fourths inch in length about the arm.- Two stars of silver metal, 1 inch apart and 1 inch above the band, and a Greek cross of red cloth 1 inch above the interval.

Grade 2: Same as 1, with one star 1 inch above center of band in lieu of two stars.

Grade 3: Five bands of blue cloth, each three-eighths inch in width and $2\frac{1}{2}$ inches in length, midway between elbow and end of sleeve 1 inch above the band, and a Greek cross of red enamel 1 inch above center of upper band.

Grade 4: Same as 3, with four blue bands.

Grade 5: Same as 3, with three blue bands.

Grade 6: Same as 3, with two blue bands.

Grade 7: Same as 3, with one blue band.

When dress uniform is worn, bands will be of gold braid instead of blue cloth.

Grades 8-14: Of same forms and in same positions as prescribed for chevrons of similar grades of the enlisted strength of the Army, but of dark blue cloth with Greek cross in red cloth 1 inch above each chevron.

Grades 15-17: Greek cross of red cloth on sleeve midway between shoulder and elbow.

(f) *Uniform and insignia will be supplied by the American National Red Cross.* The use of military titles, rank, and uniform is authorized only for American National Red Cross representatives actually in foreign countries constituting the theater of active war.

II. THE ZONE OF THE LINE OF COMMUNICATIONS

87. Organization. For administration and control the line of communications is organized into:

A service of defense,

A supply, sanitary and telegraph service,

A service of military railways,

which are divided into

A base group,

An intermediate group,

An advance group.

88. Sanitary organizations at the base. A medical supply depot, one or more base hospitals, and, when required, convalescent camps, contagious disease hospitals, hospital trains and trains for patients,

hospital ships and ships for patients, casual camps, sanitary squads, field laboratories, and organization of the American National Red Cross.

(a) These organizations are similar to those provided for the zone of the interior except that they are expanded to meet existing conditions.

89. Office of the Chief Surgeon, Army Corps, the Surgeon, Base Group, and of Division Surgeons.

(a) *Personnel.*

2 Lieutenant Colonels.

1 Major.

1 Sergeant, First Class, M.D.

4 Privates, First Class, M.D.

3 Privates, M.D.

(b) *Equipment.* No definite equipment is prescribed. The chief surgeon, field army, is not an administrative officer and will therefore not require as much office equipment as a division surgeon. On the other hand, as no transportation is required for the office equipment of the surgeon, base group, it will be unnecessary to limit his supplies to those allowed division surgeons. (For division surgeon's office equipment see par. 884, M.M.D.)

90. Organization of the Red Cross service. It will be conducted under the directions of the chief surgeon of the field army or expeditionary force

Field columns	}	as many as required.
Hospital columns		
Supply columns		
Information bureau sections.		

91. The Base Hospital. The personnel allowed a base hospital, as given in Tables of Organization, are ordinarily assigned as follows: 20 medical officers, 1 colonel (commanding), 1 major (operating surgeon), 18 captains and lieutenants (1 adjutant, 1 quartermaster, 1 pathologist, 1 eye, ear, nose and throat specialist, 2 assistant operating surgeons, 12 ward surgeons); 1 dental surgeon; 8 sergeants first class (1 general supervision, 1 in charge of office, 1 in charge of quartermaster supplies and records, 1 in charge of kitchen and mess, 1 in charge of patients' clothing and effects, 1 in charge of medical property and records, 1 in charge of dispensary) 16 sergeants (1 in dispensary, 2 in storerooms, 1 in mess kitchen, 4 in office, 2 in charge of police, 6 in charge of wards) 14 acting cooks; 115 privates first class and privates (68 ward attendants, 3 in dispensary, 5 in operating room, 1 in laboratory, 14 in kitchen and mess, 6 in storerooms, 4 orderlies, 5 in office, 4 outside police, 1 assistant to dentist, 4 supernumeraries); 46 nurses, female (1 chief nurse, 1 assistant to chief nurse, 41 in wards, 2 in operating room, 1 dietist). When female nurses are not available, additional enlisted men will be assigned in their stead.

The base hospitals will be numbered from 1 upward in a single consecutive series for the entire military establishment. They will be further distinguished by adding the designation of the field army to which they belong, as Base Hospital No. 9, 3rd Field Army.

92. **Base Hospitals supplied by Red Cross:** The Red cross may supply them wholly complete or in part by assignment of a Red Cross column which equals approximately 25% of the officers of the professional division, 25% of the ward attendants or 75% of the female nurses of the personnel of a general hospital.

93. **Organization of Red Cross Base Hospitals.** (From the Military Surgeon of May 1917).

	Officers	Nurses	Nurses' Aids	Male administrative personnel	Civilian Employees
Director.....	1				
Administrative Division.....					
Record Section, Adjutant:					
Correspondence.....					
Records of personnel.....	1	3		5	2s
Command of administrative personnel.....					
Sick call for administrative personnel.....					
Medical and surgical records.....					
Admissions and discharges.....	1			6	2s
Reports of cases—physical examinations.....					
Supply Section. Quartermaster.					
Property, Medical, Q.M., Ord., Sig. }					
Transportation }	1			10	1s
Buildings }					
Subsistence Section. Quartermaster.					
Purchase and issue of food.....				4	1s
Kitchen, main.....				8	cc
Dining room.....				8	1b
Officers' mess.....				2	1c
Diet kitchen.....		2	4	2	
Nurses' mess } Under chief nurse }				2	2c4m
Linen room }		1	6		
Professional Division.					
Wards.....		38	15	20	
Surgical section, Asst. Director, others 8.....	9				
Operating room.....			6	2	
Medical section, Asst. Director, others 6.....	7				
Dispensary.....				4	
Laboratory section, Asst. Director, others 2.....	3				
Bacteriological, pathological, and X-ray laboratories.....					
Morgue.....					
Dental section, Dentists 2.....	2				
Chaplain.....	1				
Chapel library.....					
	26	50	25	80	15

NOTE. Minimum number necessary for enrollment: Medical officers, 23; dental officers, 2; chaplain, 1; nurses, 50; male administrative personnel, all grades, 80; civilian employees, 15; nurses' aids, volunteers, 25; total, 96.

1. (s) indicates stenographers, (cc) chief cooks, (b) bakers. (m) maids.

2. It will be observed that columns 1, 2, and 5 represent the full number of personnel for these respective classes. Column 4 represents the whole personnel who will be expected to enlist in the Med. Dept., and is the minimum number

94. Hospital columns, Red Cross: Hospital columns for service at the base and along the line of communications will be organized as follows:

1 Director.

A staff of two section chiefs to keep the records and conduct the supply service of the column.

Such number of staff physicians as may be deemed expedient.

Three sections each consisting of—

1 assistant director.

2 chief nurses.

15 nurses.

Such number of cooks, ward orderlies, and laborers as may be necessary.

95. Supply columns, Red Cross: Supply columns, composed of pharmacists and others experienced in handling medical and hospital supplies, clerks, teamsters, and laborers, will be organized for the purpose of establishing and conducting a Red Cross supply service in connection with the military sanitary department.

96. Information bureau sections, Red Cross: Information bureau sections composed of clerks, stenographers, and typewriters will serve under the immediate supervision of directors general of the Red Cross and may also be attached to the bureau of information for prisoners of war.

97. Convalescent camps. These are organized as wards of the general hospital at the base.

98. Casual Camps. These are organized and equipped as circumstances require.

99. Base medical supply depot. The supplies to be kept for issue by the depots in the theater of operations are determined upon as indicated in paragraph 782, M.M.D.

100. List of articles suggested for office and storeroom equipment.

(a) Medical Supplies

Blank forms (see pars. 960 to 965).		Paper, wrapping, brown.....quires...	50
Brooms, corn.....number...	6	<i>Scales and weights, platform</i>.....number...	1
<i>Buckets, galvanized iron</i>.....do.....	12	Stationery (to be selected from post	
<i>Chest, tool, No. 1</i> (par. 937).....do.....	1	par. 844).	
<i>Desks, field, No. 1</i> (par. 940).....do.....	2	Twine, coarse.....pounds.....	10
Lanterns, globes for, white.....do.....	12	Twine, fine.....do.....	10
Lanterns, wicks for.....do.....	2	<i>Typewriters</i>.....number.....	2
<i>Lanterns, without globes or</i>		Typewriters, record ribbons for.....do.....	4
<i>wicks</i>.....number.....	6		

(b) Quartermaster Supplies

<i>Axes, with helvcs</i>.....number.....	3	<i>Flag, national, storm</i>.....number.....	1
Brushes, marking.....do.....	2	Lampblack.....pounds.....	10
<i>Cans, drinking water</i>.....do.....	2	<i>Pots, marking</i>.....number.....	2
<i>Flag, distinguishing, Red Cross</i>.....do.....	1	<i>Range, field, No. 2</i>.....do.....	1
<i>Flag, halyards for</i>.....do.....	2	<i>Spades</i>.....do.....	3

which must be enrolled. A greater number up to 238, the authorized enlisted strength, may be enrolled. Column 5 includes persons ineligible for enlistment but who may be enrolled as in the employment of the Medical Department: viz., women stenographers, cooks, for officers and nurses messes, chief cook main kitchen, the baker and 4 maids for the service of the nurses mess.

101. Field laboratory. The technical supplies for a field laboratory are contained in the following chests, case, etc. The other equipment necessary in furnishing the laboratory will be supplied on requisitions approved by the surgeon, base group.

<i>Case, microscopical supplies, supplementary (par. 921).....number....</i>	1	<i>Crate, field laboratory (par. 939).....do....</i>	1
<i>Chest, field laboratory No. 1 (par. 930).....do....</i>	1	<i>Microscope, field, with accessory case (par. 950).....number....</i>	<u>1</u>
<i>Chest, field laboratory No. 2 (par. 931).....do....</i>	1	<i>Total weight.....pounds.....</i>	34

102. Sanitary organizations of the Intermediate group. Rest stations, organizations of the American Red Cross, and such other sanitary formations, as may be necessary.

103. Rest Station. These obtain personnel equipment usually from Red Cross units, but may obtain them from evacuation ambulance companies.

104. Hospital Trains and Trains for Patients. The Equipment Personnel are supplied from zone of interior (see par. 84). Temporary personnel, may be supplied from any sanitary troops, exclusive of the evacuation hospitals and evacuation ambulance companies, whose personnel should under no ordinary circumstances be diminished but permanent details from the service of the interior should be requested for their continued operation.

105. Sanitary organizations of the Advance group. Two evacuation hospitals and one evacuation ambulance company for each division at the front supplied from the advance section, and an advance medical supply depot. (The evacuation hospitals, and evacuation ambulance companies of the advance section are collectively known as the sanitary column.)

106. Advance medical supply depot. If the advance depot is more or less stationary and occupying buildings it will be organized like the base depot and require similar equipment. On the other hand, if this depot is keeping in close touch with troops in active operations it will constitute a rolling reserve for the divisions at the front. Under these conditions its own equipment and the supplies it keeps on hand for issue will be limited by the character and quantity of transportation available for its use.

(a) *A medical reserve unit.* This is a collection of medical supplies which it is estimated will meet the immediate requirements of a reserve for one infantry division. A certain number of these units will be kept in the Medical Department depots in time of peace ready for emergency issue. No provision is made in the medical reserve unit for replenishing the supplies of sanitary formations on the line of communications.

107. Evacuation Hospital. (Capacity 432.) Two to a line of communication. (They will be numbered and designated like base hospitals, Par. 793, M.M.D.)

(a) *Personnel.* (Par. 794, M.M.D.) The personnel of an evacuation hospital at War Strength as given in Tables of organization are ordinarily distributed as follows: 16 medical officers, 1 lieutenant colonel (commanding), 1 major (operating surgeon), 14 captains and lieutenants (1 adjutant, 1 quartermaster, 2 assistant operating surgeons, 10 ward surgeons); 8 sergeants first class (1 general supervision, 1 in charge of office, 1 in charge of quartermaster supplies and records, 1 in charge of kitchen and mess, 1 in charge of detachment and detachment accounts, 1 in charge of patients' clothing and effects, 1 in charge of medical property and records, 1 in charge of dispensary); 20 sergeants (1 in dispensary and 2 in storerooms, and in mess and kitchen, 4 in office, 1 in charge of wards, 1 in operating room); 10 acting cooks; 141 privates first class and privates (98 ward attendants, 3 in dispensary, 5 in operating room, 10 in kitchen and mess, 4 in storerooms, 4 orderlies, 5 in office, 6 outside police, 6 supernumeraries.)

(b) *Equipment.* (Pars. 889 to 892 M.M.D.)

108. **The evacuation ambulance company.** (Organized only in time of war) (one for each division at the front). They will be numbered consecutively from 1 upward for each field army to which they belong, as "Evacuation Ambulance Company No. 1, 3rd Army Corps." (Par. 804, M.M.D.)

(a) *Personnel and Equipment.* (Pars. 806 and 897 M.M.D.) The same as for an ambulance company with such modifications as the conditions under which the former is serving may warrant. Motor ambulances should if practicable, be substituted for horse drawn vehicles. Ordinarily pack mules will not be required, and, owing to the fact that the company normally operates from the head of the line of communications where there is a supply depot, the quantity of reserve surgical dressings provided for the ambulance company may be largely reduced. The dressing station supplies may be used in establishing rest stations.

109. **Hospital train.** The composition and equipment are the same as those of a hospital in the zone of the interior. (See par. 83.)

110. **Hospital ships.** Their personnel and equipment are the same as those of hospital ships in the zone of the interior. (See par. 84.)

111. **Equipment of evacuation hospital, base hospital, and medical reserve unit** as to be found in par. 891 M.M.D. but evacuation and base hospitals are not strictly limited to articles listed in this table.

112. The United States Army Ambulance Service.

(a) *Commissioned Personnel*

1	Colonel
2	Lieutenant Colonels
8	Majors
32	Captains
160	First Lieutenants

203 Total.

(b) Enlisted Personnel

One hundred and sixty ambulance sections, each consisting of:

- 1 Sergeant, first class.
- 2 Sergeants.
- 1 Corporal
- 2 Mechanics
- 2 Cooks
- 26 Privates, first class
- 11 Privates.

45 Total.

(c) Equipment

The following transportation is authorized for each section:

- 20 Motor ambulances
- 1 Motor truck (2 ton)
- 1 Motor truck ($\frac{3}{4}$ ton)
- 1 Motor car (5 passenger)
- 1 Motor cycle (with side car)

113. Field Columns, Red Cross. Field Columns Red Cross, will supplement and assist the regular transport in the transportation of patients from field hospitals to evacuation and field hospitals, by the use of litters, ambulances, hospital trains, for patients, hospital ships, and ships for patients; by the establishment of rest and food stations, and by the performance of such other duties as they may be called upon to perform.

Field columns are organized as follows:

- 1 Director, commanding,

A staff of two section chiefs (to keep the records and conduct the supply of service of the column.)

- 4 sections, each consisting of:

- 1 assistant director

1 section chief

4 assistant section chiefs

16 men

III. THE ZONE OF THE ADVANCE

114. The typical military unit in the zone of advance. The division is the great administrative unit and forms the model for the organization and administration of smaller units operating independently. To the division alone are regularly attached ammunition, supply, sanitary, and engineer trains.

Note: A train in military parlance means pack animals or vehicles serving the troops.

Upon this unit are made all computations for men, supplies, equipment, transportation, disabilities, etc.

115. The sanitary organization of a division.

(a) Those attached to regiments or similar or other organizations.

(b) The sanitary trains.

116. The sanitary train.

(a) The sanitary train includes all vehicles, animals, personnel, and reserve sanitary material, not attached to organizations, employed in collecting the sick and wounded of the division pending their evacuation by the line of communication. (F. S. R. 278.)

(b) When Army Corps are assigned to divisions for the purpose of supply and for the care and evacuation of the sick and wounded the divisional trains of the division to which they are assigned must be increased. When Army Corps are organized into a separate brigade their administration and supply follows the principles laid down for a division. In this instance the necessary ammunition, supply and sanitary train are organized and assigned to the brigade.

117. Ambulance company. (Four to a division.) The ambulance companies will be numbered from 1 upward in a single consecutive series for the entire military establishment. Motorized companies will be odd numbered; animal drawn, even numbered. (G. O. 98, 1917.)

(a) The vehicles of the ambulance company will be marked as prescribed in Tables of Organization. (M.M.D. 668 and 545.)

Ambulances not deemed passenger-carrying vehicles—Bul. 43, 1914.

118. Horsedrawn ambulance company. M.M.D. 874 and 877.—Equipment Tables G. O. 39, 1915. *Arms.* (G. O. 82, 1911.) When ambulance companies are organized, there will be issued to the commanding officer of each company, upon requisition:

12 revolvers, cal. .38, model 1913;

12 boxes, of cartridges, revolver, caliber .38;

12 holsters, revolver, colt, caliber .38;

and the requisite number of cartridges, ball, caliber .38 for use therewith; not to exceed forty rounds for each revolver issued.

(a) **R. R. Transportation for an ambulance company.** M.M.D. 876.

119. Field Hospital. The field hospitals will be numbered from 1 upward in a single consecutive series for the entire military establishment. M.M.D. 695. The motorized companies will be odd numbered; the animal drawn, even numbered. (G. O. 98, 1917.)

(a) *Personnel.* The personnel of field hospital at war strength, as given in Tables of Organization, are ordinarily assigned as follows: 1 major (commanding); 5 captains and lieutenants (1 adjutant and 1 quartermaster, 4 ward surgeons); 3 sergeants first class (1 acting first sergeant in general supervision of the hospital and in charge of the medical property and records, 1 in charge of transportation and quartermaster property and records, 1 in charge of mess supplies and cooking); 6 sergeants (1 in charge of dispensary, 1 in charge of operating equipment, 1 in charge of patients' clothing and effects, 3 in charge of wards); 3 acting cooks, 55 privates first class and privates (46 attendants, 1 dispensary assistant, 1 artificer, 4 orderlies, 3 supernumeraries); and of the Quartermaster Corps, 1 sergeant (wagonmaster) and 7 privates (drivers).

(b) *Equipment.* M.M.D. 879, 880.

Note: The wagons of the field hospital will be marked as prescribed in Tables of Organization. M.M.D. 696, 545.

Directions for loading are contained in loading tables, par. 883 M.M.D.

120. Equipment of Regimental Detachment Sanitary Troops.

I. *When a regiment is operating as part of a Division. M.M.D. 633.*

- (a) First Aid Packets carried by each officer and soldier of the regiment.
- (b) Individual equipment carried by each officer and soldier of the Detachment, Medical Department, see Pars. 127; 130-137.
- (c) The Regimental combat equipment. M.M.D., 866 and 867.
 - (1) First Aid Station equipment, carried on mule.
 - (2) Additional articles carried on regimental field train and ammunition wagons.
 - (3) Quartermaster Supplies, G. O. 39, 1915, Tables, VI, IX, XI, XIII, XV, XVII, and XXV, amended by G. O. 72, 1916.

II. *When a regiment is operating independently. M.M.D. 632.*

- (a) First Aid Packets carried by each officer and soldier of the regiment.
- (b) Individual equipment carried by each officer and soldier of the Detachment, Medical Department, see Pars. 127; 130-137.
- (c) The Regimental Combat equipment. M.M.D., 869, 870.
- (d) The camp infirmary equipment, M.M.D. 869, 870.
- (e) Additional articles for regimental hospital. M.M.D., 869, 870.
- (f) Quartermaster supplies, same as above.

121. Channel of Supply for Regimental Detachment, Sanitary Troops. In combat it is contemplated that the expenditures of dressings, etc., will be replenished from the reserve supplies of the nearest ambulance company or camp infirmary, without formal receipts but the Division Surgeon may authorize transfer of supplies from the sanitary organizations, M.M.D. 551.

Note: When a regiment is operating independently in addition to the combat equipment of the sanitary detachment there is loaned from the division sanitary train and temporarily attached to each regiment of Infantry, Cavalry, Artillery, and Engineers, in time of peace a camp infirmary equipment and one ambulance with harness and animals complete.

(a) Each regiment in garrison is also required to keep on hand the necessary additional equipment under "Additional for Regimental Hospital" to complete one regimental hospital. The articles shown under "Additional for Regimental Hospital" will not be taken into the field except when the regiment is expected to operate independently under conditions where the immediate evacuation of their sick and wounded would be impracticable and then only in the order of the Department Surgeon.

122. Regimental combat equipment. The articles constituting the regimental combat equipment are given in Par. 866, M.M.D.

123. Method of packing the aid station equipment.

(Carried on the pack mule.) with combat train. M.M.D. 633

		Pounds.	Pounds.
Right side:		100	100
Medical and surgical chest.....	number....	1	
Left side:			
Ax short handle.....	do.....	1	5
Box pack mule, No. 1.....	do.....	1	30
Candles, lantern.....	do.....	8	1
Guidons, ambulance, without staff.....	do.....	2	
Lanterns, folding.....	do.....	2	2
Lime, hypochlorite.....	tubes.....	10	
Shoes, mule, fitted.....	number....	2	2
Surgical dressings, box of (contents only).....	do.....	1	60
Wire cutters.....	do.....	1	1
			101
Top:			
Bag, nose.....	do.....	1	1
Bag, water, sterilizing.....	do.....	1	6
Brush, horse.....	do.....	1	1
Bucket, galvanized iron.....	do.....	1	4
Comb, curry.....	do.....	1	
Fly, wall tent, small.....	do.....	1	17
Tent pins, small.....	do.....	6	3
			32
Total weight.....			233

Note: If under exceptional circumstances the pack mule is required to keep pace with fast moving cavalry, the pack will have to be lightened by dispensing with the top load, otherwise sore back and exhaustion of the mule are almost certain to occur.

124. The Pack Outfit. (Bul. 50, 1916.)

(a) *The pack saddle proper*

No. 1. Pack frame, metal	number..	1
No. 2. Stretchers or spreaders for saddle pads, corrugated metal	number..	2
No. 3. Saddle pads	do....	2
No. 4. Quarter straps	do....	4
Nos. 5 and 6. Quarter strap rings sets, complete, consisting of two rings with leather union and two cincha straps	sets..	2
No. 7. Cincha, horsehair, double	do....	1
No. 8. Accessory leather straps	number..	6
No. 9. Breast collar straps	do....	2
No. 10. Breast collar body piece	do....	1
No. 11. Breast collar neck piece	do....	1
No. 12. Breast collar choke strap	do....	1
No. 13. Fork straps for turnback	do....	2
No. 14. Turnback and crupper, complete	do....	2
No. 15. Breeching hip strap	do....	1
No. 16. Breeching straps	do....	2
No. 17. Breeching body piece	do....	1
No. 18. Thongs, rawhide	do....	6

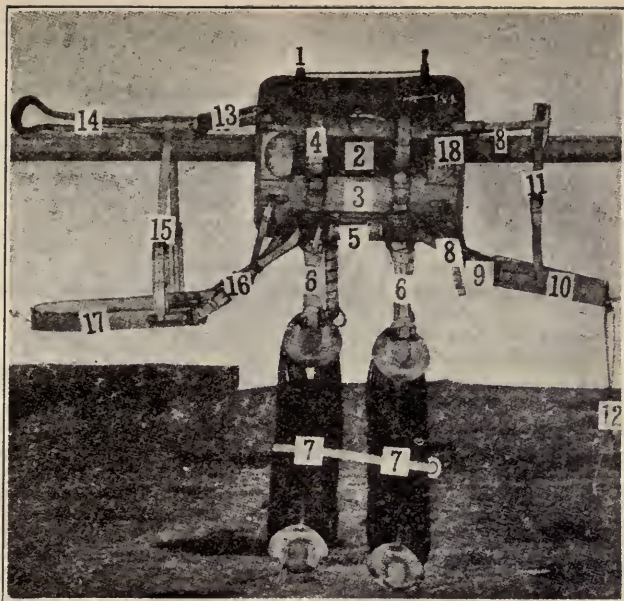


FIG. 1

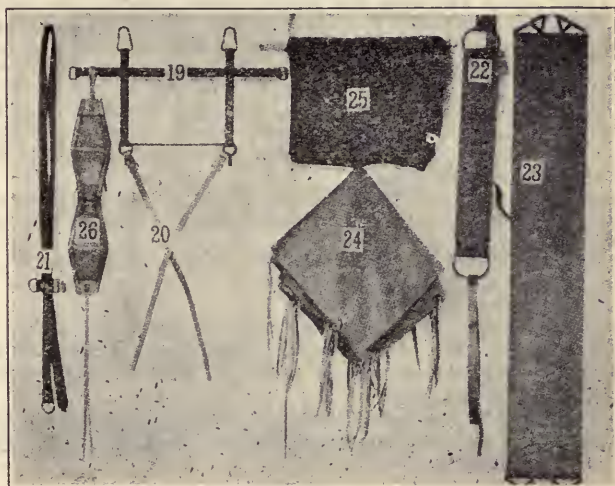


FIG. 2

(b) *Accessory Articles*

No. 19. Cargo frames (modified Rice frames), Nos. 1 and 2 of each	number..	1
No. 20. Straps, leather, for attachment of frames to cincha rings	number..	4
No. 21. Load straps, web, long and short of each	do....	2
No. 22. Load cincha (belly piece), short, complete, with two cincha straps	number..	1
No. 23. Load cincha (top piece), long complete	do....	1
No. 24. Manta, canvas, 6 by 6 feet, with 20 rawhide thongs, number		1
No. 25. Saddle blanket	number....	1
No. 26. Blind, cupped, complete	do....	1

125. (c) Method of using the pack outfit. As the pack outfit from the supply depot, the pack saddle proper is assembled as shown in figure 1. The accessory articles are loosely packed in the shipping box.

To use the pack outfit, the saddle blanket is placed on the animal and the pack saddle proper over the blanket. The breast collar and breeching are adjusted to the animal as required. The saddle is then firmly cinched in position. To prevent undesirable moving about on the part of the pack animal while the saddle and load are being placed in position, it is advisable to blindfold the animal by means of the cupped blind.

To load the animal, place the No. 1 frame on the saddle, followed by the No. 2 frame (the number is stamped on the horizontal bar of each frame). Adjust the leather straps attached to the D rings on the under side of each frame so that when buckled into the cincha rings of the saddle they will hold the frame firmly against the saddle but not so tightly as to bend the frame. The boxes or other articles constituting the side loads are placed in the frames and secured by the short load straps passed to the D rings on the horizontal bar of each frame. The top load, if any, is then put in place. The long load straps are now thrown over all, the rings in their ends slipped into the hooks on the frames, and the straps drawn up tightly by means of the buckles. If necessary, the load may be further secured by the use of the load cincha.

Experienced packers may find it an advantage to substitute for the load straps a single length of three-eighth-inch rope with a ring, or loop, in one end.

The boxes carried as side loads need no protection from the weather. When a top load is carried, it is wrapped in the manta before being loaded.

Great care should be taken that approximately the same weight is carried on each side of the saddle, otherwise the load will carry badly and the pack animal will be likely to develop sore back.

126. Camp Infirmaries.

(a) *They will be numbered* from one upward consecutively, and the wagon belonging to each infirmary will be marked as prescribed in Tables of Organization.

(b) *Allowance in time of peace.* One to each regiment.

(c) *In time of War or mobilization of the Division.* Four to the division are receipted for and in charge of director of ambulance companies, the remainder are turned in to the officer in charge of medical supplies at the concentration camps and the wagons assigned to the units of the sanitary train which have none in time of peace. (M. M. D. 658.)

(d) *Personnel M. M. D. 660.*

1 Sergeant, Medical Department.

1 Driver, Quartermaster Corps.

(e) Equipment, 1 wagon, 4 mules, T of O.

(f) Supplies M. M. D. (869, 870, 871).

Note: The men and animals of the camp infirmary will usually be attached for rations, and forage, to one of the regiments served by the infirmary, or to an ambulance company. (M. M. D. 660.)

(g) *On the march and in camp.* Except mobilization camps the medical supplies and dispensary service required by regimental organizations are provided through the medium of the camp infirmary. M. M. D. (a)

(h) *Weight carried by the camp infirmary wagon.* (exclusive of driver and his individual equipment.) 2018 lbs.

If transportation for medical officers' baggage, tentage, forage, etc., is provided by the regimental field train as required by Field Service Regulations, equipment "B" (par. 872) may also be carried without exceeding the maximum load for one wagon.

127. Individual field equipment of officers.

(a) Quartermaster Articles

(Note: Equipment "A" is to meet the requirements for a period of at least ten days; equipment "B," for at least 20 days; equipment "C," for at least 30 days.)

ARTICLES	A	B	C	REMARKS
Bag, barrack.....	1	.....	1	Optional.
Bar, mosquito.....	1	.....	1	Specified for tropics.
Basin, canvas.....	1	.....	1	
Bedding roll.....	1	.....	1	Or a canvas roll as a combination, bedding-clothing roll.
Bed sack.....	1	.....	1	Optional.
Blankets, olive drab.....	1	1	2	
Buckets, canvas.....	1	.....	1	
Clothing.....	.....	.....	.....	Officers clothing here listed does not include that worn on the person.
Belt, waist.....	1	1	1	
Breeches, pair.....	1	1	2	See notes 2 and 3, Uniform Regulations, Par. 50.
Drawers, pair.....	3	1	4	See Par. 50, Uniform Regulations.
Gloves, woolen, pair.....	1	.....	1	Winter use, for dismounted duty only.
Laces, shoe, extra pair.....	1	1	2	
Shirts, flannel, olive drab.....	1	1	2	
Shoes, marching, pair.....	1	1	2	
Stockings, pair.....	5	1	6	See Par. 50, Uniform Regulations.
Tag, Identification.....	1	.....	1	
Tape, for identification tags, yards.....	1	.....	1	
Undershirts.....	3	1	4	See Par. 50, Uniform Regulations.

ARTICLES	A	B	C	REMARKS
Clothing roll.....	1		1	Or a canvas roll as a combination bedding-clothing roll.
Cot.....		1	1	
Head net, mosquito.....	1		1	Only when specially ordered, See Note 6, page 556, G. O. 39, 1915.
Lantern, Combination.....	1		1	Or a folding lantern.
Locker, trunk.....		1	1	
Nails, horseshoe.....	16		16	For each mounted officer, carried on mount.
Pins, tent, shelter.....	10		10	For each officer, below rank of Major only.
Poles, tent, shelter.....	2		2	For each officer below rank of Major, only.
Poncho.....	1		1	When dismounted.
Shoes, horse, fitted.....	2		2	For each mounted officer, carried on mount. See under "Animals."
Slicker.....	1		1	When mounted.
Sweater.....	1		1	Optional.
Tents, shelter half Mounted.....	2		2	For each officer below rank of Major. Supplied by organization with which serving.
Toilet articles				
Comb.....	1		1	
Mirror.....	1		1	
Paper, toilet, package.....	1		1	
Soap, cake.....	1		1	
Toothbrush.....	1		1	
Towels, face.....	3		3	
Veterinarians Field Equipment,				
Veterinarians saddle bag.....	1		1	See Note 38 and Note 39, page 568, G.O. 39, 1915.

Mounts may be furnished to medical officers below rank of Major by Quartermaster Corps.

(b) *Medical Department Articles*

Brassard.....	1		1	
Contents of Officers web belt:				
Case, instrument.....	1		1	For officers below grade of Lieut. Col.
Case, medicine.....	1		1	
Diagnosis Tags, book of.....	1		1	
Flask, empty, for morphine solution.....	1		1	
First aid packet.....	1		1	
Syringe, hypodermic.....	1		1	
Syringe, hypodermic, extra needles for.....	12		12	
Thermometer, clinical.....	1		1	

(c) *Ordnance Articles*

Ammunition.....				See footnotes (a) (d).
Belt, web, Medical Officers below grade of Lieut. Colonel.....	1		1	
Canteen with strap.....	1		1	
Dispatch case.....	1		1	See footnote (b).
Field Glass.....	1		1	

ARTICLES	A	B	C	REMARKS
First aid pouch.....	1		1	See footnote (c).
Fork.....	1		1	
Identification tag.....	1		1	
Knife.....	1		1	
Meat Can.....	1		1	
Pistol.....	1		1	See footnote (a).
Pistol Holster.....	1		1	See footnote (a).
Saber belts (full dress and garri- son).....				Required for garrison service or for cere- monies as required by orders but officers of the staff departments will not carry the saber into the field.
Saber Knots (full dress and garri- son).....				
Saber Scabbard.....				
Saber straps or saber carriers.....				
Saddle equipment.....	1		1	"X"
Spoon.....	1		1	
Spurs, with russett and black straps.....	1		1	
Tin cups.....	1		1	
Watch.....	1		1	
Whistle.....	1		1	For organization commanders.

NOTES

(a) Medical officers and dental surgeons are not required to carry pistol and ammunition, but may be so equipped when necessary for personal protection, nor are they required to carry *field glass* and *compass* unless on duty with sanitary units in the field. (But they are very useful) (editors).

(b) Dispatch cases are furnished medical officers on memorandum receipt, and to inspector-instructors of National Guard on requisitions and are accounted for as are other articles of ordnance supplied to them. Notebooks and pencils required by Uniform Regulations, page 66, together with stationery and maps are carried in them.

(c) Medical officers wear the first aid packet ring down, in pouch furnished by ordnance department, in front of left hip attached to the field belt.

(d) When armed magazine pocket is worn in front of left hip between first aid packet and belt fastener, as in the Cavalry.

(e) A flat type of saddle similar to the English saddle, covered with russett leather and provided with open stirrups of metal, may be used by all officers on all occasions (including test rides), except when on duty with troops in the field, at inspections, at drills (as a component part of the organization), and on occasions of ceremony, in which cases the regulation saddle will be used.

128. Allowance of Personal Baggage for Officers of Expeditionary Forces.

(a) *Commissioned.*

(a) Officers above the grade of captain 400 lbs.

This allowance includes equipment "C," professional books and all necessary clothing and bedding for extended field service

(b) Officers below the grade of major 350 lbs.

This allowance includes equipment "C" (exclusive of horse equipment), professional books and all necessary clothing and bedding for extended field service.

(b) Contract Surgeons and Veterinarians same as (b) above.

129. Containers for personal baggage. For the above classes of persons, standard trunk lockers and bedding rolls or their equivalents in similar containers.

INDIVIDUAL FIELD EQUIPMENT OF ENLISTED MEN

130. Articles issued by Quartermaster.

G. O. 39, 1915, amended by Section III G. O. 53, and Sec. III G. O. 55, 1915, and Sec. 1 G. O. 13 and Sec. IV G. O. 58, and Sec. I, G. O. 72, 1916.

TABLE XXVI

ARTICLES	A	B	C	REMARKS
Bar, Mosquito.....	1		1	(A) One for every two men (C) One for every man
Bed Sack.....		1	1	
Blankets, O.D.....	1	1	2	
CLOTHING (includes what each man wears)				
Belt, waist.....	1		1	
Breeches, pair.....	1	1	2	
Chevrons see Par. 84j A.R.....				
Cord, hat.....	1		1	
Drawers.....	2	1	3	
Gloves, riding.....	1		1	For mounted men only.
Gloves, woolen.....	1		1	For winter use only.
Hat, with tying cord.....	1		1	
Laces, shoe, extra pair.....	1	1	2	
Leggings, canvas.....	1		1	
Leggings, leather.....	1		1	For mounted men only.
Shirts, flannel O.D.....	1	1	2	
Shoes, marching pair.....	1	1	2	
Stockings, pair.....	3	2	5	See Par. 50 A.R.
Tags, identification, with tape.....	1		1	
Tags, identification.....	1		1	
Undershirts.....	2	1	3	See Par. 50 A.R.
Cot.....	1	1	1	
Head net, mosquito.....	1		1	Issued to one man when no mosquito bars are issued.
Nails, horse shoe.....	16		16	
Overcoats, for winter use.....	1		1	
Pins, tent, shelter.....	5		5	
Slicker.....	1		1	
Ration, Par. 302, F. S. R.....				
Shoes, horse and mule, fitted.....	2		2	
Slicker (for each mounted man).....	1		1	
Sweater.....	1		1	
Tents, shelter half, dismounted.....	1		1	(It is better to have all one type and that one, the mounted. Editor.)
Tents, shelter half, mounted.....				
TOILET ARTICLES				
Comb.....	1		1	
Housewife.....	(1)		(1)	(1) One for each squad of 8 men.
Paper, toilet, package.....		(1)	(1)	(1) As needed from company supply.
Soap, cake.....	1		1	A.R. 1215.
Toothbrush.....	1		1	A.R. 1217.
Towels, face.....	1		1	A.R. 1217.

Note: To get the quantities for any sanitary detachment unit, multiply the above by the number of personnel, in T of O.

Note: Slickers and Overcoats will be shortened to reach only to the knee.

(a) *For service in France.* One pair of Hip rubber boots.

One pair of moccasins (sheepskin or light leather), for service in the trenches.

Two suits of Olive Drab woolen clothing, light wool socks, overcoats, field shoes, winter gloves, wool underwear, and 3 blankets each.

Mosquito bars, head nets and khaki clothing will not be taken.

131. THE SERVICE KIT. G. O. 56, 1915 (a) The field kit, clothing, component, is composed of the following articles in addition to the clothing worn on the person.

1 Blanket	1 Slicker, ambulance drivers
1 Comb	and ambulance orderlies
1 Drawers, pair	1 Soap, cake
1 Housewife (for 1 man for	2 Stockings, pair
each squad)	1 Toothbrush
1 Poncho, dismounted men	1 Towel
	1 Undershirt

1 is carried on the person by dismounted men and on the packed saddle by the mounted men, is supplemented by the surplus kit, the two together making up the clothing component of the service kit.

(b) The surplus kit consists of:

1 Breeches, pair	2 Stockings, pair
1 Drawers, pair	1 Shoe laces, extra pair
1 Shirt, O. D	1 Undershirt
1 Shoes, russet leather, pair	

The surplus kit pertains to Equipment "B" (Par. I. G. O., No. 85, W. D., 1914) as part of the permanent camp equipment, to be forwarded to troops when serving in instruction, maneuver, mobilization, or concentration camps, or when in active service a temporary suspension of operations permits the troops to refit. In peace time maneuvers and marches the surplus may accompany the troops, if so directed in the orders prescribing the movement. The vehicles and animals of the combat train and those representing the divisional supply train will be utilized to transport them.

132. Surplus kit bags will be issued to each organization at the rate of one to each squad, one for the Sergeants and one for the Cooks and Buglers and one for every eight men of the detachment.

133. Marking of surplus kit bags. Each bag will be marked with the letter of the company and the number of the regiment, as provided in Par. 295, A. R., for haversacks and the proper designation of the squads to which the bags belong, both markings to be in center of front cover flap.

The kit bag for the "Sergeants," and "Cooks and Buglers," respectively. Similarly the kit bags for the detachments will be appropriately marked.

134. Packing of surplus kit bags. Stockings to be rolled tightly, one pair in the toe of each shoe, shoes placed together, heels at opposite ends, soles outward, wrapped tightly in underwear and bundle securely tied around the middle by the extra pair of shoe laces, each bundle to be tagged by the company number of the owner. These individual kits will be packed in the surplus kit bag in two layers of four kits each, the breeches and olive drab shirts to be neatly folded and packed on the top and sides of the layers, the jointed cleaning rod and case provided for each squad being attached to the thongs on the inside of the bag.

135. Storage of surplus kits. Organization commanders will keep on hand a sufficient supply of surplus kit bags, marked as prescribed above, but unpacked. (G. O. 56, 1915.)

In garrison the surplus kit articles are not required to be kept habitually packed and stored or kept apart from the rest of a soldier's belongings. The soldier should have the clothing component of the surplus kit. Surplus kits are packed only when commanders require it to be done.

13F. Articles issued by Medical Department.

(a) New Pattern, M. M. D. 1916 edition.

ARTICLES	REMARKS
Brassards, MMD 624	1
Contents of web belt MMD 907	Place in belt. (Pockets are numbered from left around belt to right front)
Bandages, gauze, compressed	6
Gauze, sublimated two $\frac{1}{2}$ yard pieces in package, packages	2
Individual dressing packets Par. 949..	10
Iodine, swabs, 6 in box	2
Pins, common paper.....	$\frac{1}{2}$
Pins, safety dozen.....	1
Plaster, adhesive 5 yds. by 1 in.	1
Spiritus ammoniae aromaticus, in flask with cup, flasks	1
Torniquet, field	1
	Pocket No. 9.
	Pocket No. 2.
	Pockets No. 4, 5, 6, 7, and 8.
	Pocket No. 2.
	Pocket No. 10 from compartment.
	Pocket No. 1.
	Pocket No. 1.
	Pocket No. 10.
	Pocket No. 1.

CONTENTS OF POUCH. MMD. 907.

Case, linen or canvas, containing:	
Forceps, dressing	1
Scissors, dressing	1
Pencil, lead, with metal cap	1
Tags, diagnosis	1
First aid packet	1
	Carried ring down in pouch front left hip. (A. R. 74.)

(Note: Medical officers are authorized to make such changes as they desire in the expendable contents of the belts worn by their orderlies. Under some circumstances it may also be desirable to make substitutions in contents of belts worn by noncommissioned officers. In case of transfer of belt to another medical officer the standard contents should be restored.)

(b) Old Pattern. M. M. D. 1911 edition,

Pouch MEDICAL DEPARTMENT (MMD 899) (Waterproof canvas pouch)

Ammoniae spiritus aromaticus, in flask with cup	ounces	2
Bandages, gauze, compressed	No.	6
Bottle 4 oz. with rubber stopper	No.	1
Case containing pins, common and safety, scissors and dressing forceps	No.	1
First Aid Packets	No.	4
Gauze, sublimated, two $\frac{1}{2}$ yd. pieces in package	Package	4
Iodine in 1 gram tube	Tubes	10
Jackknife with sawblade and corkscrew	No.	1
Plaster, adhesive 1 in. wide and 10 yards long	Spool	1
Splints, wire gauze for 1 in. roll	No.	1
Tourniquet, field	No.	1

POUCH ORDERLY (MMD 900) Old issue MMD 1911 edition
(Waterproof canvas pouch)

Ammoniae spiritus aromaticus, in flask with cup	ounces	2
Bandages, gauze, compressed	No.	6
Bottle 4 oz. with rubber stopper	No.	1
Case, pocket (Par. 812)	No.	1
Chloroformum, in case	Pound	$\frac{1}{2}$
Catheter, rubber, in box, size No. 20, French scale,	No.	1
Diagnosis tags and pencils	Books	2
First Aid Packets	No.	1
Gauze, sublimated, two $\frac{1}{2}$ yd. pieces in package	Packages	8
Iodine, in 1-gram tube	Tubes	10
Jack-knife with sawblade and corkscrew	No.	1
Lantern, folding	No.	1
Ligature, silk, braided, sterilized, 3 sizes in package	Packages	3
Ligature, silk, braided, sterilized, 3 sizes in package	Packages	3
Pins, common	Paper	1
Pins, safety	Dozen	1
Plaster, adhesive, zinc, 1 in. wide and 10 yds. long	Spool	1
Rubber bandage, 2 yds long and 2 $\frac{1}{2}$ in. wide	No.	1
Scissors	No.	1
Splints, wire gauze for, in. roll	Yard	1
Syringe, hypodermic	No.	1
Tin with screw top as container for 3 5-dram vials for hypodermic Sol. ...	No.	1

(Note: As it is often very difficult in the field to prepare solutions for hypodermic use, a tin case with screw top is provided as container for three vials in which are kept the solutions most likely to be needed, such as morphine sulphate, strychnine sulphate and nitro glycerin, these solutions should be freshly made every two or three days with distilled or boiled water.)

137. Articles issued by Ordnance Department. New Pattern,
(M. M. D., 865, 943.)

ARTICLES	A	B	C	REMARKS
Belt, web, Med. Dept	1	1		Carried on belt when dismounted inommel pocket when mounted.
Canteen	1	1		
Canteen cover, dismounted				
Fork	1	1		
Hand axe Infantry (2)	1	1		
Hand axe carrier	1	1		
Hanger, double web, for canteen	1	1		
Horse equipment	1	1		
Bridle, cavalry	1			

ARTICLES	A	B	C	REMARKS
Carrier strap	1			
Cooling strap	1			
Currycomb	1			
Feedbag	1			
Grainbag	1			
Horsebrush	1			
Lariat	1			
Picket pin	1			
Picket pin	1			
Carrier special				
Pommel pockets	1			
Ration bag retaining special strap...	1			
Saddle	1			
Saddle blanket	1			
Spurs	1			
Spurs straps	1			
Knife	1	1		
Meat can	1	1		
Pouch for diagnosis tags and instru-		1		
ments	1	1		
Pouch for first aid packet	1	1		
Ration bags, cavalry	1	1		
Spoon	1	1		

(Note: 1. Detachment commanders are authorized to reduce by four inches, the length of the handle of the ax issued to the Med. Dept., provided the change is made in a workmanlike manner. The shorter handle will be especially necessary for use by mounted men.

2. With each equipment there is issued one halter and strap (or rope) for stable use and one horse cover (or horse cover, blanket lined) when necessary. Spurs and spur straps are carried as personal equipment by the Ordnance Department.)

(b) *Old Pattern.*

Belt, waist, leather.

Haversack and strap.

Knife, Hospital Corps.

Knife, Hospital Corps, scabbard for.

138. Allowance of Personal Baggage for Enlisted Men and Civilians of Expeditionary Forces.

(a) Noncommissioned officers of grade of color sergeant and above 100 lbs.
This allowance is additional to equipment "C" and will comprise such articles for extended field service as can be carried in one standard barrack bag or equivalent container.

(b) Enlisted men below grade of Color Sergeant 75 lbs.
This allowance is additional to equipment "C" and with it will comprise all necessary articles for field service as can be carried in a barrack bag or its equivalent.

(c) Civilian employes of the classified service, same as (a) above.

(d) Civilian employes not in the classified service, same as (b) above.

CHAPTER IV

OFFICE ADMINISTRATION

139. **Duties of the Medical Department.** The Medical Department is charged with the recruitment, instruction and control of the enlisted force of the Medical Department. It also performs those duties which are known collectively as the sanitary service. These have to do with methods of preventing disabilities among troops, care, treatment and transportation of disabled personnel of the Army, supplying certain stores and equipment for the purposes just mentioned and the making and preserving of accurate records of individual cases of disability.

140. **Office administration.** The typical Medical Department office combines hospital administration with administration of the personnel, and may be said to include all matters connected with the duties of Medical Officers.

141. **The duties of Medical Officers.** They are Advisory, Administrative and Professional.

I. ADVISORY

These are the duties of the staff officers to his commander, viz.:

1. To keep the commanding officer informed of all conditions existing, or anticipated, threatening the health and physical efficiency of the command which have a bearing upon military administration. To recommend appropriate measures to meet or prevent unsanitary conditions. These may be divided into:

(a) The training of the command in habits of personal hygiene and military sanitation.

(b) The provisions of facilities (appropriations and supplies) for maintaining good sanitary conditions.

(c) The necessary recommendations as to sanitary conditions and care of troops in reference to shelter, including plans and construction, heating, lighting, ventilation and clothing, subsistence and preparation and care of food, water supply and water purification, disposal of wastes, selection of camp sites. Exercise.

(d) The recommendation necessary to the proper disposal of the disabled personnel of the Army, in the theatre of operations and the Zone of the Interior, and the civilian population of the occupied territory.

(e) The recommendations or requests for leave of absence, or furlough on account of disability.

(f) The necessary recommendations on the reports of the physical examinations of all persons in the military service as required by law or regulations. (See physical examinations, Chapter VI.)

(g) The making of prescribed reports, returns and recommendations and with such action on reports, returns and recommendations of his subordinates as may be required by existing regulations and orders.

II. ADMINISTRATIVE

These duties are similar in character to those of administrative officers of the line of the Army in reference to the personnel of the Medical Department. They are:

1. The training, discipline, and assignment to duty of the personnel which they command and the supervision of the internal economy of their organizations.

2. The maintenance of equipment in proper condition by requisition for supplies needed and by proper care of property on hand.

3. The keeping of the prescribed records and the making of the prescribed reports and returns of personnel.

4. Sanitary tactics—the administration of the sanitary service in the zone of the advance, the line of communication and the zone of the interior.

(Note: Medical Officers acting in an administrative capacity are directly responsible for the condition and efficiency of their commands.)

III. PROFESSIONAL

1. *Military.* Such duties as may be required of any commissioned officer by virtue of his commission, viz.:

(a) Membership on Courts-Martial and Military Commissions.

(b) Survey Officers.

(c) Post exchange officer (at General Hospital).

(d) Inspector-instructor of Militia Organizations (G. O. 33, 1911.)

(e) Duty with military relief division of the American National Red Cross. (Sec. 10, Act. June 3, 1916.)

2. *Medical.*

(a) *Care and treatment of disabled.* This includes all personnel of the Army, persons attached to or serving with the Army, prisoners of war, unassigned recruits, applicants for enlistment and civilian population of the occupied territory.

(b) *Instruction.* Professors and instructors in military hygiene and sanitation, sanitary tactics and first aid, of Medical Officers and qualified candidates for Medical Corps of the line of the Army and the National Guard.

(Note: The senior Army Medical Officer detailed at the Military Academy [whose rank shall not be below that of Lieutenant Colonel] is professor of military hygiene. G. O. 80, 1910.)

(c) *Physical examinations of following persons:* candidates for commission, applicants for enlistment, candidates for promotion, applicants for sick leave, sick furlough, transfer on account of sickness, certificate of disability for discharge and retirement and all other physical examinations required by regulations, orders and existing laws.

(d) *Duty with Panama Canal Commission.*

(e) *Membership on boards of health and as health officers.*

(f) *Such other details to commissions or boards as may be authorized from time to time by law.*

142. Books of reference and instruction to be kept in the company office.

- Army horse in Action and Disease (Mounted organizations only).
- Army Paperwork (Moss).
- Army Rations, Issue and Conversion Table.
- Army Register.
- Army Regulations.
- Army Transport Regulations.
- Compilation of General Orders, Circulars and Bulletins, War Department (1881-1915).
- Conventional Signs (Used on Maps).
- Description of Automatic Pistol (Pamphlet No. 1715 from Chief of Ordnance).
- Digest of Opinions, Judge-Advocate General.
- Drill Regulations and Service Manual for Sanitary Troops.
- Elements of Military Hygiene (Ashburn) and Military Hygiene (Havard).
- Equipment and Horse Training, note on (for mounted organizations only).
- Field Musicians' Manual (Canty).
- Field Service Regulations.
- Guide, Inspector General's Department.
- Instructions regarding the disposition of unserviceable Ordnance property and Table Credit Allowances (Pamphlet No. 1871 from Chief of Ordnance).
- Instructions for the preparation of Identification Record Cards.
- List of Blanks, Pamphlets, etc., furnished by the Ordnance Department (Form 1467, from Chief of Ordnance).
- List of staple Medical and Surgical Supplies, standardized by medical subcommittee council of National Defense.
- Manual of Army Bakers.
- Manual of Army Cooks.
- Manual of Army Horseshoer (Mounted organizations only).
- Manual for Courts-Martial.
- Manual of Medical Department (From Surgeon General).
- Manual of Physical Training.
- Mason's Hand-book for Medical Department.
- Mess Sergeants' Hand-book (Holbrooke).
- Military Laws of the United States.
- Military Sketching and Map Reading for Noncommissioned Officers (Grieves).
- Noncommissioned Officers' Manual (Moss).
- Officers' Manual (Moss).
- Ordnance Property Regulations (from Chief of Ordnance).
- Pack Transportation (Daly).
- Price List of Ordnance and Ordnance Stores (Pamphlet No. 1897, from Chief of Ordnance).
- Privates' Manual (Moss).

Price List Medical Supplies.

Quartermaster Corps Manual.

Regulations for General Hospitals.

Regulations for Field Maneuvers, U. S. Army.

Regulations for Regular Army Reserve.

Rules of Land Warfare.

Soldier's Foot and Military Shoe (Munson).

Soldier's Hand-book.

Special Regulations, No. 28, Sanitary Regulations and Control of Communicable diseases.

Supply and Allowances Tables (Pamphlet No. 1970 from Chief of Ordnance).

Tables of Organization.

Uniform Regulations.

Uniform Specifications.

Equipment Tables, G. O. 39, 1915.

OFFICE RECORDS

143. Preservation of records. All public records of whatever nature, are the property of the United States and must be carefully kept.

(a) Registers of sick and wounded, will be permanently preserved.

(b) Other records and retained copies of reports and returns kept at military hospitals will, in the absence of specific regulations and orders governing their disposition, be destroyed after five years from their date.

144. Disposition of obsolete records. Accumulations of obsolete and worthless documents at independent administrative offices of the Medical Department should be reported every few years to the Surgeon General with a view to obtaining authority from the Secretary of War for their destruction. These reports should indicate the character of the documents in question, their date or period, and, if known, the date of the last call for them.

145. Unauthorized use of records: No information which can be used as a basis of a claim against the United States will be furnished anyone. Such a person should be directed to apply to The Adjutant General of the Army.

Any person in the military service may furnish an affidavit concerning the service of an applicant, but this should be sent through The Adjutant General of the Army.

146. Disposition of records on discontinuance of office. The Medical Officer will report the fact to the department surgeon, and after completing all current reports will forward them to the Surgeon General.

147. Disposition of accumulated records in theatre of operations. They will be *classified* according to the staff department to which they respectively pertain, *securely wrapped and labeled* and *forwarded* for safe keeping to the surgeon, base group, or to such other officer as the division surgeon may direct. The labels should show the

character of the contents of each package, the name of the organization to which they belong, and the inclusive dates which the records cover.

148. Mode of keeping records in absence of a medical officer.

(a) The officer designated to take charge of medical property will sign all property and administrative papers.

(b) The physician who renders professional service will sign papers of a professional character.

BOOKS AND RECORDS

The following books and records are required by Army Regulations and War Department orders to be kept in every office:

149. Morning Report. (A. R. 280), which shows, at the hour the report is submitted, the exact condition of the company as to the number of officers and men present for duty, sick, absent, etc. All changes since last report (the day before) are shown by name, under "Remarks," on the right-hand page, and by number on the left-hand page.

150. Daily Sick Report. (A. R. 280, Form No. 339, A. G. O.) on which are entered the names of all enlisted men requiring medical attention and such of the company officers as may be excused from duty because of illness. The report is signed each day by a medical officer and the company commander, and shows whether or not the sickness was incurred in line of duty.

151. Surgeon's Morning Report of Sick (Form 71, M.D.). This is rendered daily to the commanding officer and is a consolidated sick report of the command.

152. Military History of Services. (G. O. 1, 1905, as amended by G. O. 7, 1910 and G. O. 24, 1912.)

(a) *Kept by independent sanitary units* under the immediate supervision of the commanding officer.

(b) *It will contain the following data in detail:*

Information, including orders, concerning original formation of the organization.

Recruitment.

Changes in organization, increase or decrease in strength.

Stations of the organization.

Arrival and departure from stations.

Marches, campaigns, battles, etc.

Names of personnel killed and wounded in action.

Names of personnel who have especially distinguished themselves in action.

(c) Before books and records are destroyed as contemplated in A.R. they should be carefully examined to see that everything of historical value therein has been recorded in the history of the organization.

(d) A copy of the record of the previous year will be forwarded as soon after the beginning of a new calendar year as possible to the Adjutant General of the Army direct.

153. The medical history of post. A medical history of every permanent post will be kept by the Surgeon in a loose-sheet binder furnished by the Surgeon-General.

Contents. The duplicates of the sanitary reports; the duplicate report sheets of sick and wounded in a single chronological sequence; additional sheets (measuring about 13 by 8 inches) for noting the occurrence of epidemic diseases and other data of general and sanitary interest (inserted as required) in chronological sequence. The prescribed records of the official indorsements on sanitary reports will invariably be made on the duplicates filed in the medical history.

154. The two records of disabilities and deaths.

(a) *The register of sick and wounded.* This is kept on register cards, Form 52 M.M.D., which are made from data obtained at time of admission of patient to the sick report (or time of death) *by every command in time of peace* which is attended by a medical officer or employed physician, and *in time of war by all immobile units of the medical department*, including camp hospitals and field hospitals immobilized as camp hospitals. The register cards are filed according to number in continuous series and indexed on cards Form 52 (a), which are filed alphabetically. Cases on sick report are kept in a current file alphabetically and when completed these cards are placed in the permanent file.

Cases that are recorded. All cases of illness, accident, operation, or death, of officers or enlisted men, active or retired, whether on sick report, excused from duty or not, who are with the command. Cases not excused from duty marked "carded for record only." Cases of trivial illness not liable to be later made a matter of record need not be recorded.

Method of preparation. The instructions for the preparation of the register are contained in par. 437 to 456 inclusive, Manual of the Medical Department, and on the form for recording diagnosis, the nomenclature followed by the Census office par. 455 M.M.D. must be used invariably, or the statement "undetermined," in matters of doubt.

(b) *The list of sick and wounded* (Par. 427, M.M.D.) This is kept by all mobile sanitary units, that is, those serving with mobile troops in the zone of the advance, on Form 53, Manual of the Medical Department. Data for the same are obtained from the sick report of the command and diagnosis tags on wounded and dead which are returned to the surgeon by the division surgeon (see report of sick and wounded in zone of advance). It contains in chronological order a record of the following cases:

(1) Every officer or soldier with the command who is excused from duty on account of sickness or injury, or who receives a wound of any character in action whether it involves excuse from duty or not.

(2) Every officer or soldier with the command, not currently on the list, who is sent to another command or place for observation or treatment.

(3) Every officer, not currently on the list, who departs from the command on sick leave.

(4) Every officer or soldier with the command, not currently on the list, who is retired, or discharged for disability, or dies; and every civilian with the command who dies.

In determining the cases to be entered on the list of sick and wounded, officers and soldiers who are killed or wounded in action will be considered as with the command by whose sanitary personnel they are tagged. The names of such officers and soldiers will therefore not necessarily appear on the list of sick and wounded of their own organization.

(5) In entering on the list of sick and wounded the casualties resulting from an engagement, there should be included only those cases which have not been previously tagged by members of other organizations and in the case of field hospitals those retained for definite treatment, except that all cases transferred to the line of communications should be recorded by the organization transferring them in order that there may be a record within the division of the final disposition of such cases.

155. Daily record of casualties. After the close of each day of an engagement the casualties resulting from the action will be entered on the monthly list of sick and wounded in two groups, first those who suffered by the personnel of the organization making the list, second those occurring among the personnel of other organizations.

156. Diagnosis tags. During and after an engagement diagnosis tags will be attached to all wounded and dead as soon as practicable. They will be made out in duplicate.

(1) *The original diagnosis tag will be attached to the patient's clothing.* The tag will be made out by the first one who treats the man previous to admission to a hospital on the line of communication. (It is unnecessary to tag a patient who is admitted to a hospital on the line of communications without having been previously tagged.)

(2) *The duplicates of the diagnosis tags will be disposed of as follows:*

(a) Those made out by the sanitary personnel of an organization for the officers and soldiers of their own command will be retained by the surgeon and provided with his next monthly report (on Form 52).

(b) Those made out for officers and soldiers of other commands will be transmitted as soon as possible after the close of each day of an engagement to the division surgeon accompanied by the check list.

(3) *The final disposition of the original tags will be as follows:*

(a) Those of the wounded who are returned from aid stations to the firing line without going farther to the rear will be removed and retained by the regimental surgeon.

(b) Those of the wounded who are returned to their organizations direct from dressing stations or from the station for slightly wounded will be removed upon their reporting for duty and be turned over to the surgeons of their several organizations, respectively.

(c) Those of the wounded who are admitted to a field hospital and retained there for definitive treatment will be removed and forwarded to the division surgeon. If the patients are subsequently

transferred to the line of communications, they will not be retagged, but will be accompanied by transfer lists in regular form.

(d) Those of the wounded who are being evacuated from the zone of the advance will not be disturbed until the patients are admitted to hospital on the line of communications, when the tags will be moved, stamped with the name of the admitting hospital, and the date of receipt of the patient, and forwarded immediately to the division surgeon of the division to which the wounded belong.

(e) Those of the wounded who die while in transit from the field to hospital (the death in each case being noted on the tag as required by the printed instructions in the tag book), and the tags attached to the dead found on the field, will be removed when the bodies are prepared for internment or equivalent disposal, and will be sent likewise to the division surgeon.

157. Distribution of tags by division surgeon. The division surgeon will cause the tags received by him to be distributed without delay to the senior medical officers of the commands to which the men tagged belong, so that they may be available in accounting for officers or soldiers who would otherwise be carried as missing on the returns of their organizations, and having served their purpose in completing the records of the organizations, all the tags, both originals and duplicates, will be forwarded with the next periodical lists of sick and wounded therefrom.

ON LINE OF COMMUNICATIONS

158. Evacuation ambulance companies should include in their list of sick and wounded only such cases as pertain to their own personnel and such cases as may, under exceptional circumstances, fall into their hands without having been previously tagged by other sanitary formations.

159. Hospital trains and hospital ships make complete lists in regular monthly form only of cases occurring among their own personnel and, in the case of a hospital ship, of cases admitted thereto for definitive treatment.

160. Patients transferred from mobile organizations to the line of communications. A nominal list of them is, if practicable, prepared in duplicate by the transferring officer, the original of which should be receipted and returned to him by the receiving officer. Extra carbon copies of so much as may be pertinent to the transferring officer's regular list on Form 53 may be made for this purpose. Transfers from camp hospitals in the zone of the advance should there be any such, will be accompanied by regular transfer cards. (Par. 575, M.M.D.)

(a) The duplicates of the nominal lists mentioned, or the transfer cards as the case may be, furnished as above to an evacuation ambulance company, will be turned over to the evacuation hospital or other sanitary formation to which it delivers the patients. Similar disposition will be made by a hospital train or hospital ship of the nominal lists or transfer cards received by it.

161. Patients unaccompanied by nominal lists or transfer cards. The commanding officer of the train or ship will as soon as practicable prepare a nominal list of such patients on Form 53 (separate and apart from his regular monthly list of sick and wounded) for disposition as above provided. Should the preparation of such a list be impracticable he will list the patients who seem to be in danger of death so as to be able if death occurs to report the necessary details.

(a) Should any of the cases be lost enroute by death, capture, etc., he will without delay report the cases so lost, giving the date and nature of the loss, to the surgeon, base group, or if the movement of the sick and wounded is under the immediate direction of the Surgeon General, direct to him, forwarding with such report the transfer cards (if any have been received) of the patients so lost.

(b) In the case of sick and wounded necessarily left at a hospital other than the one designated to receive them, their transfer cards, or a nominal list, as the case may be, will be left with the commanding officer of such hospital, and a similar report of the patients so disposed of will be made at once.

162. Clinical records (Forms 55-a to u). These are kept by immobile hospitals for all cases in hospital or serious cases in quarters; and are made from bedside notes in the ward.

163. Prescription files (3 classes):

1st Class. Prescriptions for alcohol, alcoholic preparations, opium or coca leaves or their preparations and derivatives.

2d Class. Prescriptions for civilians.

3d Class. All other prescriptions.

The file of the 1st Class is balanced and audited in the list of every month by a medical officer.

164. Register of dental patients (Form 79, M.D.) This is kept by the dental officer as required by Par. 465-473, M.M.D.

165. Correspondence records (Pars. 402-405, 564, M.M.D.)

(a) Of—

Department surgeons	} will be kept by	{ The record card system as prescribed in War Department orders, (1) G. O. 92, 1909, Cir. 92, 1909.
General hospitals		
Medical supply depots		
Other offices especially authorized to employ it		
		{ The materials necessary for the record card system are furnished by the Quartermaster Corps.

(b) Of—

Post hospitals	} will be kept by	{ The correspondence book system, as prescribed in War Department orders, (1) G. O. 109, 1906 and Bul. 4, 1914.
All sanitary organizations in the theatre of operations		
All other organizations not mentioned above		
		{ Correspondence books are furnished by Adjutant General.

166. The Correspondence Book. This is kept in conjunction with a Document File (A. R. 280). It contains an index, by alphabet, of all

correspondence received or sent, including reports and returns, and a brief, on the corresponding page of the nature and contents of the paper unless the original or a copy is on file in the document file. In this case the reference ("Doc. 2764," for example) is sufficient, as the paper itself can be consulted.

Papers which are of record elsewhere and which pass through the office need not be briefed in the correspondence book.

167. The Document File, being the original documents or communications when these are retained, and carbon, letter press or other copies of letters, indorsements, or telegrams sent in regard to the same, all of which are filed according to serial numbers.

168. Record of Instruction of the Enlisted force, Medical Department. This is kept in blank books ruled for the purpose.

169. Company Fund Book. (A. R. 280, Form No. 42, Q. M. C.) In which are entered all receipts to, and expenditures from, the company fund, together with the monthly proceedings of the company Council of Administration, and a list of property, with cost thereof, purchased from the company fund.

170. Hospital Fund. This has the same status as a company fund. It is balanced and audited monthly by the Hospital Council, whose proceedings are entered in the face of the retained copy of the statement (Form 49, M.D.) A. R. 258.

171. Retained copies of Rolls, Returns, etc. (A. R. 280-281.) Retained copies of the various rolls, reports, and returns (property and other) that are required by orders and regulations.

172. Memorandum receipts. (A. R. 281, Form No. 448, A. G. O.) showing all articles of ordnance, quartermaster, and other property that may be held on memorandum receipt, with date of receipt, from whom received, etc. The Company commander has a quarterly settlement with the staff officers concerned.

173. Returns of Medical Property. These are made on Forms 17, 17a, 17b, and 17c, M. D., wherever an officer is relieved of charge of medical property. Duplicate cards will be retained in the records of the hospital together with a complete set of the voucher appertaining thereto.

Returns of field supplies are made separately from returns of post supplies.

174. Delinquency Record. (A. R. 280, Form No. 509, Q. M. C.) in which are noted the disciplinary punishments awarded by the company commander in compliance with the provisions of A. R. 953.

175. Service Record. (A. R. 280, Form No. 29, A. G. O.) One for each member of the company, in which is kept a full description of him, including date of enlistment, personal description, record of deposits, trial by court-martial, record of vaccination, etc. The form itself is a guide.

176. Clothing Account. The clothing account is superseded during period of existing emergency (G. O. 89, 1917), all clothing in the hands of enlisted men is listed on Form 501c Q. M. C. and only so much clothing is allowed each man as is listed in equipment "C."

177. **Duplicate Issue Slips.** 16 (c) M. D., for non-expendable Medical property, and credit slips 16 (d) M. D. for non-expendable property are retained as memorandum receipts.

178. **Property Responsibility.** (A. R. 280, Form No. 501cc, Q. M. C., for quartermaster property, and Form No. 501c for Ordnance property.) Two looseleaf books in which are listed, in one, articles of quartermaster property, and in the other, all articles of ordnance property, issued each soldier for his personal use.

179. **Descriptive Card of Public Animals.** (A. R. 280, Form No. 277, A. G. O.) To be kept in organizations supplied with public animals.

180. **Summary Court Records.** (Form No. 594, A. G. O.) Commanding officers are required by A. R. 957 to furnish organization commanders with true copies of all summary court records relating to men of their organizations, which papers form part of the records of the organization.

181. **Files of Orders.** (A. R. 280.) A file will be kept of all orders issued by the company commander. Files will also be kept of all orders and instructions received from higher authority.

CLERICAL DUTIES

182. **How clerical duties are performed.** The clerical duties of an office of sanitary organizations are performed usually by selected and trained noncommissioned officers of the Medical Department. It is the duty of the senior noncommissioned officer to keep account of the time when periodical reports are to be made and to see that they are prepared and submitted on time. He has charge of the Correspondence Book and Document File and under the supervision of the company commander or surgeon, he writes all letters and indorsements connected with administration of the organization.

183. **Nature of clerical duties.** These refer to writing and record of correspondence and the preparation of the company or detachment morning report, the sick report of the detachment or company, the consolidated surgeon's daily report of sick and wounded, ration returns, company returns, the pay rolls, discharges, final statements, muster rolls, reports, requisition, etc., which necessitate keeping the data with which to make out these papers.

Files of War Department and other orders received must be kept complete. The senior noncommissioned officer reports to the company commander any missing orders. When an order is received revoking or modifying in any way a previous order, the fact of revocation or modification, with number and year of revoking or modifying order will be noted on the order revoked or modified.

The Army Regulations, Drill Regulations, Uniform Regulations, and all other War Department publications must be kept posted to date, as required by G. O. 11, W. D., 1912. Amendments to the Army Regulations and other War Department publications are published as "changes," copies of which are furnished to those individuals and offices that have received these publications.

It is the duty of the senior noncommissioned officer to see that there is always on hand a supply of all blank forms. In case any form is about to be exhausted, he will at once notify the company commander.

184. Observance of the following will add to the efficiency and usefulness of the clerical force:

(1) When an officer severs his connection with the organization, or when the senior medical officer is to be absent for a month or more, the senior medical officer should be reminded about completing the efficiency reports to date, and also transferring the fund.

Note: The rendition of efficiency reports has been suspended during the present war.

(2) Enter in the correspondence book the fact and date of mailing of muster rolls, pay rolls, company returns, and all other papers, reports and returns that are made of record in the Document File.

(3) The deposit books or other books or any folded paper that may be put on the surgeon's company commander's desk or that may be presented to him for his signature should be open at the proper place.

(4) Study carefully General Orders 23, 1912, in reference to correspondence.

(5) Become thoroughly familiar with the following paragraphs in the Army Regulations: 85, 87, 90, 103, 104, 106-113, 117, 124, 127, 129-135, 139-145, 147-167, 178-188, 275-282, 316-324, 327-329, 345, 370, 374, 464-470, 677-703, 710, 713, 718, 722, 724, 725, 775-790, 802, 807-810, 811-816, 818-824, 827, 834-839, 860, 863, 871, 903-914, 929-931, 933, 940, 1023, 1027, 1044, 1053, 1056, 1062, 1063, 1072, 1074-1077, 1089, 1091, 1092, 1147, 1153, 1176, 1181, 1184, 1202, 1203, 1205-1209, 1214, 1215, 1220-1223, 1229, 1232, 1233, 1236-1238, 1249, 1315-1491, 1521-1523, 1534-1538, 1540-1542, 1549, 1551, 1569-1573.

(6) Always read every post, regimental, department and War Department order, and all bulletins and changes that are received. When orders, bulletins or circulars modifying existing orders, for rendering reports and returns, or change notations on standard forms, a typewritten epitome of the changes should be made and posted in the regulations or manual opposite the paragraph affected by the change.

185. Official Blank Forms. A supply of the blank forms should be kept on hand in a suitable case, with properly labeled compartments.

186. Force and Effect of Blank Forms. (A. R. 1571) (care 33) The standard blank forms used in army administration, with the notes and directions thereon, have the force and effect of Army Regulations. New forms of alterations will not be made without authority of the Secretary of War, and the date on which a form or alteration was authorized will be printed on the form itself.

187. How furnished in time of peace. They will be furnished by the chiefs of the various bureaus and offices of the War Department. Requisitions therefor will call for them by number and name.

188. How furnished in time of war. For service of the interior as prescribed above. For the service of the theatre of operations by

requisition of the staff officers at the base of operations or the base of line of communications; through the division staff officers who will keep on hand an emergency supply of the blank forms of their respective staff corps and departments, preferably carried in the supply train.

189. Use of Manuscript Forms. (A. R. 1572.) This is prohibited when the proper printed forms therefor are on hand.

190. Furnished by the Adjutant General's Department. The forms furnished by the Adjutant General's Department are given in a list published under date of Nov. 17, 1915. Distribution to posts or organizations is made by the department adjutants (Par. 1, G. O. 80, 1911), and in each department there are orders prescribing when and how the requisitions (on Form 383, A. G. O.) shall be submitted, whether the forms shall be gotten from the department adjutant direct or from the post adjutant, etc. A. R. 1571 requires that blank forms be called for by name and number. Requisitions for these forms should be made January 1 and July 1 to the department adjutant general, except in the case of forms the titles of which are printed in italics, which are supplied directly by the Adjutant General's Office. (M. M. D. 962.)

Note: The numbers in parentheses following the names of the forms, refer to the paragraphs in the Army Regulations bearing on the use of the forms.

FORM NO.	PURPOSE
370 W. D.	Final Statement. (140)
3	Notification of discharge. (155)
15	Statement of service.
17	Certificate of disability. (159)
18	Trimonthly report of enlistments. (857)
21	Muster roll, detachment. (807)
22	Enlistment paper. (857)
25	Descriptive and assignment card. (847)
26	Field Return. (812)
29	Service record. (280)
30	Return of detachment. ¹ (811)
34	Inventory of effects of deceased soldier. (162)
59	Report of cases tried by summary court. ¹
66	Furlough. (106)
95	Descriptive list of deserters. (118)
99	Record of summary court. ¹
135	Report of physical examination (recruit). (857)
140	Account of clothing issued to recruit.
141	<i>Application for enlistment.</i>
143	Medical certificate for leave of absence.
149	Return of casualties in action. (818)
196	Report of survey. (810)
260	Identification record card.
265	Monthly report of medical examination of applicants for enlistments.
277	Descriptive card for public animals. (1069-1071)
332	Morning report, company or detachment. (280)
339	Daily sick report. (280)
377	Report of physical examination and test, field officers.
378	Report of physical examination and test, captains and lieutenants.

FORM No.	PURPOSE
380	Designation of beneficiary of officer or enlisted man.
383	Requisition for books and blank forms supplied by the Adjutant General's Dept.
415	Report of death and disposal of remains. ¹ (167)
423	Preference card.
429	Efficiency report. (829)
442	Reservist's enlistment paper.
443	Reservist's descriptive card. (par. 16 Regulation Regular Army Reserve.)
444	Reservist's report card (par. 19 R. E. A. R.)
448	Memorandum receipt.
448a	Instruction slip.
448b	Abstract record of memorandum receipts.
484	Report of board of disability of enlisted men.
489	<i>Model remarks for muster rolls.</i>
525	Honorable discharge from United States Army. (150) - Blank forms are retained in personnel possession of Co. Commander.
559	Report of soldier's transfer to Army Reserve. (Par. 16 R. E. A. R.)
	Correspondence book.
1-107	<i>Correspondence model.</i> (Interior Department.) <i>Medical certificate for insane persons.</i>

¹ For general hospitals or other independent commands only.

191. Furnished by the Quartermaster Corps. Circular 12, Office of the Quartermaster General, June 8, 1916, publishes a list of the blank forms furnished by that department, with instructions as to their use.

Organization commanders obtain the forms from the post quartermasters except the delinquency record (No. 509), the company council book (No. 452), and the individual property responsibility (No. 501), which are obtained by letter direct from the Quartermaster General (Paragraph (d) page 107, Cir. 12, O. Q. M. G., 1916) and the final statement (No. 370), which is distributed by the department adjutant (Bulletin 19, 1913) and in some department organization commanders are required to obtain it from the post adjutant. In practice the Q. M. C., forms that are obtained from the post quartermaster are gotten by verbal request, by sending a note or writing a letter.

FORM No.	PURPOSE
	(a) WAR DEPARTMENT STANDARD FORMS
336	Officers' pay account.
350	Reimbursement of traveling expenses (book).
350a	Reimbursement of traveling expenses (loose sheet).
366	Pay roll, enlisted men (first sheet).
366a	Pay roll, enlisted men (insert sheet).
369	Soldier's or nurse's pay voucher (when entitled to commutation of quarters, heat, or light).
	(b) QUARTERMASTER CORPS
8a	Advice of soldiers' deposits.
38	Soldier's allotment, original and duplicate.

FORM No.	PURPOSE
39	Discontinuance of soldiers' allotment.
41	Soldier's deposit book.
42	Certificate for commutation of rations (individual).
69	Model remarks for pay rolls.
70	Instructions (pay roll).
160	Requisitions for supplies, general. ¹
160a	Requisitions for supplies, general (extra sheet).
164	Directions for measuring for clothing of special sizes.
165	Individual clothing slip (original and duplicate).
165a	Individual clothing slip for Alaska (original and duplicate).
165b	Statement of clothing charged to enlisted men.
180	Abstract of clothing drawn on individual clothing slips.
180a	Abstract of clothing drawn on individual clothing slips, in Alaska.
201	Invoice of or receipt for quartermaster property transferred.
204	Requisition for issue of stationery.
208	Statement of charges.
211a	Requisition for fuel and bedding (for field use).
213	Requisition for clothing (in bulk).
213a	Requisition for clothing (in bulk) (extra sheet).
218	Requisition for forage (book). ¹
218a	Requisition for special substitution forage.
223	Ration return (book).
227	Memorandum receipt.
406	Official telegrams (book, large and small).

¹ For general hospitals or other independent commands only.

192. Furnished by the Ordnance Department. Requisitions are made annually and forwarded to the Chief of Ordnance not later than April 30th of each year (A. R. 1551.) In the Philippines requisitions are sent directly to the Department Ordnance Officer (Par. 7, Cir. 14, 1908.)

(a) (List of blank forms given in pamphlet No. 1467, Ordnance Department; also in the Ordnance Property Regulations, 1909 and par. 964, Manual for the Medical Department.)

FORM No.	PURPOSE
18	Return for organizations for which accountability system is not prescribed.
18 } cover }	
	For returns for which forms numbered 18 are used.
18a	Return, individual officer's horse equipment.
19	Certificate of expenditures, material.
86	Statement of charges on pay roll.
94	Monthly report of ordnance charges on pay rolls.
146	Combination blank for issue of ordnance property (for invoice or receipt).
151	Transfer of ordnance property. (Thin paper of pads of 30 sheets each.) ¹
152	Invoice and receipt for transfer of ordnance property under Army Regulations.
386	Requisition for ordnance and ordnance stores.
1467	List of blanks, pamphlets, etc. ²

FORM No.	PURPOSE
1715	Equipment, Cavalry model of 1912: Description and directions for use and care of. ²
1719	Equipments, horse, and equipments for officers and enlisted men. ²
1879	Price list of small arms, personal equipment of soldier, etc. ²

¹ Used only in time of war and will not ordinarily be supplied except for such use.

² Issued to organizations only.

193. Furnished by the Inspector General's Department.

FORM No.	PURPOSE
1	Inventory and inspection reports.
1a	Extra sheets for Form 1.
2	Inventory and Inspection reports of Public animals.
2a	Extra sheets for Form 2.

194. **Furnished by the Medical Department.** Requisitions for these blanks should be made on Form 37 for the ensuing six months and forwarded direct to the Surgeon General except in the Philippine or the Hawaiian Department, where they will be sent to the department surgeon. For complete list of forms, see Par. 961, M. M. D.

195. CALENDAR OF

Reports, Returns, Estimates, and Requisitions to be made by the Surgeons and Commanding Officers of Hospitals and other units; also action enjoined by regulations and customs.

1. *Those required in Peace (in the Zone of the Interior).* Par. 398, M. M. D.

DAILY

NATURE	FORM No.	AUTHORITY	REMARKS
Surgeon's Morning Report	71, M.D.	Par. 1471, A.R.	One copy rendered to the adjutant to note and return
Morning Report, Detachment of Enlisted Force, Med. Dept.	332 AGO		One copy rendered to the adjutant to note and return
Daily Sick Report, Detachment of enlisted men of Med. Dept.	339 AGO	Par. 1471a, A.R.	One copy kept in the office after notation by medical officer taking sick call.
Daily sick report of organizations: presented with patients at sick call	339 AGO	Par. 1471, A.R. Par. 207, M.M.D.	Notation of those excused from duty, because of disability, whether in line of duty or not and whether under provisions of G.O. 31, W.D., 1912, which see. Made by Medical Officer taking sick call and returned to company commander

MONTHLY
ON THE FIRST

NATURE	FORM No.	AUTHORITY	REMARKS
Ration Return of Matron, and others rationed separately	223 QMC	Par. 1203 and 1210 A.R.	Directions on the form. See par. 265, M.M.D
Voucher of commutation of rations of enlisted patients, nurse corps, and others	Par. 351, M.M.D.	Par. 1212, A.R. Par. 232, M.M.D.	Two copies, original and one memorandum to the C.O., for the Quartermaster
Trimonthly report of enlistments	18 A.G.O.		1 copy to Adjutant General direct with enlistment paper form No. 22, A.G.O., report of physical examination form No. 135, A.G.O., and designation of beneficiary form No. 380, A.G.O. 1 copy retained

BEFORE THE SIXTH OF THE MONTH

Return of the nurse corps for previous month	63 M.D.	Par. 98, M.M.D.	1 copy direct to Surgeon General through department surgeon. 1 copy retained
Efficiency report of nurses for previous month	62 M.D.	Par 99, M.M.D.	Prepared by chief nurse or commanding officer; one copy to Surgeon General direct or through the department surgeon. 1 copy retained
Report of repairs to the hospital or sergeants' quarters during previous month	Letter	Par. 245, M.M.D.	To Surgeon General direct; 1 copy retained
Statement of the hospital fund	49 M.M.D.	Par. 260-262. M.M.D. and Par. 1462, A.R.	Original copy to Surgeon General through Dept. Surgeon with vouchers of receipts and expenditures. Retained copy, on which is recorded the proceedings of the hospital council which audited it.
Voucher for laundry work not done by matron	330 or 330a W.D.	Par. 270-278. M.M.D.	Forwarded to medical dispensary officer and made as directed by Par. 277-278, M.M.D.

BEFORE THE SIXTH OF THE MONTH (Contd.)

NATURE	FORM No.	AUTHORITY	REMARKS
Account Current	320 or 320b W.D.	Par. 377-378, M.M.D.	Rendered by disbursing officers and made as required by Par. 277-278, M.M.D.
Report of issue of medicine to civilians	Letter	Par. 244, M.M.D.	1 copy to Surgeon General, or in the Philippines to Dept. Surgeon
Report of sick and wounded for previous month	51-51a-51b and 51c, M. M.D.	Par. 457 and 458, M.M.D.	Dept. Surgeon or to Surgeon General direct, or to Medical Superintendent, Transport Ser- vice, from transport surgeon. 1 copy
Report of dental work for pre- vious month	57 M.D.	Par. 473, M.M.D.	By the dental surgeon through medical channels to surgeon general
Report of medical examination of applicants for enlistment, for previous month	265 A.G.O.	Par. 871, A.R.	By the medical examiner direct to the Surgeon General. Di- rections on form

TENTH AND TWENTIETH

Trimonthly report of enlist- ments	18 A.G.O.	On the form Par. 857 A.R.	1 copy to Adjutant General direct with enlistment papers, form No. 22, A.G.O., and re- port of physical examination form No. 135, A.G.O., and designation of beneficiary, form No. 380, A.G.O. 1 copy re- tained
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LAST DAY

Personal report	Letter	Par. 12, M.M.D. and Par. 827, A.R.	By commissioned officers and contract surgeons. 1 copy to Surgeon General direct from independent posts and two copies through Dept. Surgeon
Pay rolls—enlisted men	366, 366a, W.D.	On the form	One original signed by the en- listed men; two "true copies," forwarded to the commanding officer for the quartermaster

LAST DAY (Contd.)

NATURE	FORM NO.	AUTHORITY	REMARKS
			who will return one copy with rolls extended to be retained. See instructions in G.O. 40, 1916
Pay rolls—Nurse Corps	334-334a W.D.	On the form	Payment noted on their letters of appointment. Pay accounts for nurses ordered home for discharge prepared by Surgeon General. Par. 79, M. M.D.
Trimonthly report of enlistments	18 A.G.O.	On the form. Par. 857 A.R.	One copy to Adjutant General direct, with enlistment papers form No. 22, A.G.O., report of physical examination form No. 135 G.O., and designation of beneficiary, form No. 380, A.G.O.
Sanitary Report	50 M.D.	Par. 1387, A.G.O.	Forwarded through military channels to the Adjutant General of the Army. A duplicate copy will be filed in medical history of post. Par. 412, 414, 415, M.M.D. The commanding officer returns a copy of his indorsement to the report for file with the duplicate
Requisition for forage	218 Q.M.C.	Note on form Par. 1387, A.R.	One copy with rolls, one copy retained
Report of Ordnance charges on pay rolls	94, O.D.	Note on form	One copy with rolls, one copy retained
Statement of charges for Quartermaster property	208 Q.M.C.	Note and heading on form	Two copies post quartermaster. One copy retained
Subsistence charges on pay rolls	43 Q.M.C.	A.R. 1242 and G.O. 85, 1906	One copy to accompany rolls. One copy retained

JANUARY 1st

NATURE	FORM NO.	AUTHORITY	REMARKS
Statement of preferences	423, A.G.O.		One to Adjutant General direct, see form
Report of surgical operations	58, M.D.	Par. 418-420	One to Surgeon General direct or through Department Surgeon (not later than the 14th of January)
Requisition special for medical supplies	35, M.D.	Par. 482, M.M.D.	Four copies through Department Surgeon or three copies direct to Surgeon General
For tableware and kitchen utensils	166 Q.M.C.		Three copies to Q.M. One retained
Certificate of breakage china and glassware	207 Q.M.C.		Two copies to Q.M. or organizations using Q.M. china
History of Company during past year. (To be rendered only by independent companies)	Letter	G.O. 1, W.D. 1905 and Par. 11, G.O. 24, W.D. 1912	To the Adjutant General of the Army direct, as soon as possible

JANUARY 31st

Return of enlisted men M.D.	47 M.D.	Par. 50, M.M.D.	Original to Surgeon General direct or through Dept. Surgeon. One copy retained. Instructions on form
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FEBRUARY 28th

Muster rolls of Medical Dept. Of patients	21 A.G.O. do	A.R. 807 et sequenter do	See instructions on the forms do When patients are separated from their command
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MARCH 31st

NATURE	FORM NO.	AUTHORITY	REMARKS
Return of enlisted M.D.	47, M.D.	Par. 50, M.M.D.	Original to Surgeon General direct or through Dept. Surgeon. One copy retained. See instruction on form

APRIL 1st

Special requisition for medical supplies	35 M.D.	Par. 482, M.M.D.	See also Par. 243
Requisition for tableware and kitchen supplies	166 Q.M.C.		Three copies to Quartermaster One retained
Certificate of breakage, china and glassware	207 Q.M.C.		Two copies to Q.M. Organizations using Q.M.C. property

APRIL 30th

Muster rolls of detachment of patients	21 A.G.O.	Par. 807, A.R. et sequeter	Instructions on form. do When patients are separated from their commands
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MAY 31st

Return of enlisted M.D.	47 M.D.	Par. 50, M.M.D.	Original to Surgeon direct or through Dept. Surgeon. One copy retained. Instructions on form
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JUNE 30th

Muster rolls of detachment of patients	21 A.G.O.	Par. 807, A.R. et sequeter	See instructions on the form (For patients separated from their commands)
Return of Ordnance and Ordnance stores	18 O.D.; 18 cover	See form	In duplicate to post ordnance officer

NATURE	FORM No.	AUTHORITY	REMARKS
Statement of charges Ordnance property, on muster rolls	86 O.D.	See form	One copy with rolls; one copy retained
Return of horse equipment	18-a O.D.	Par. 1549, A.R.	
Requisition for blanks	37 M.D.		

JULY 1st

Special requisition for medical supplies	35 M.D.	Par. 482, M.M.D.	See Par. 243
Requisition for tableware and kitchen utensils	166 Q.M.C.		By ambulance companies having Q.M. supplies
Certificate of breakage, china and glassware	207 Q.M.C.		By ambulance companies having Q.M. supplies

JULY 31st

Return of enlisted men M.D.	47 M.D.	Par. 50, M.M.D.	Original to Surgeon General direct or through Dept. Surgeon. One copy retained. Instructions on form
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AUGUST 31st

Muster rolls of Medical Dept. Muster rolls of Patients	21 A.G.O. do	A.R. 307 et Seq. do	Instructions on forms do
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SEPTEMBER 30th

Return of enlisted M.D.	47 M.D.	Par. 50, M.M.D.	Original to Surgeon General direct or through Dept. Surgeon. One copy retained. Instructions on form
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OCTOBER 1st

NATURE	FORM No.	AUTHORITY	REMARKS
Special quarterly requisition for medical supplies	35 M.D.	Par. 482, M.M.D.	See also Par. 243
Requisition for tableware and kitchenware	166 Q.M.C.		By ambulance companies having Q.M. supplies
Certificate of breakage, china and glassware	207 Q.M.C.		By ambulance companies having Q.M. supplies

OCTOBER 31st

Muster Rolls of detachment company of patients M.D.	21 A.G.O.	Par. 807, A.R.	See instructions on form For patients separate from their commands
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NOVEMBER 30th

Return of enlisted Med. Dept.	47 M.D.	Par. 50, M.M.D.	Original to Surgeon General direct or through Dept. Surgeon
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DECEMBER 31st

Muster rolls M.D. of detachment company of patients	21 A.G.O.	Par. 807, A.R.	See instructions on forms For patients separated from their commands
Efficiency report of officers	429 A.G.O.	A.R.	The reporting officer is the one under whom the officer reported upon is serving. The surgeon of a post renders one for each Medical Officer at the post. These reports go through military channels to the War Department. When an officer's station is changed an efficiency report is made by his immediate commanding officer and forwarded to his new commanding officer. The report blanks contain space for a report by every officer under

NATURE	FORM NO.	AUTHORITY	REMARKS
			whom the officer to be reported upon has served during the year. Any unfavorable entry concerning a matter of fact will be communicated to the officer to be reported upon for remark and return but any unfavorable report expressing an opinion will not be communicated by the reporting officer to the officer reported upon. An officer at any time desiring to have recorded on his efficiency report any commendatory order or letter may forward a copy of it to the Adjutant General through military channels

OCCASIONALLY

Statement of repairs to Hospitals	Letter	Par. 1466, A.R.	
Statement of repairs to quarters of Sergeants 1st Class	Letter	Par. 1466, A.R.	
Report of change of station or status M. O. D.S. C.S. M.D. or A.N.C.	Letter		Two to Surgeon General through Dept. Surgeon or one direct. See Pars. 12, 13, 18, 19, 32, 45, 55, and 100, M.M.D. A special personal report is made through the same channels upon any change in the station, status or duties, stating the authority therefore, with number, date and source of order making the change. When an officer arrives at Washington, D. C., or at headquarters of a Dept., he will report at office of Adjutant General and record his name and temporary residence and authority for absence from station
Ration return detachment. Med. Dept. Nurses civilian and sick in hospital	223 Q.M.C.	Par. 1209 1214 A.R.	One to C.O., one retained. Made at such intervals as directed by C.O.

NATURE	FORM NO.	AUTHORITY	REMARKS
Change of station or M.O. D.S. or C.S.	Letter	Par. 827, A.R. M.M.D., 12 and 13	One to Adjutant General; one to Surgeon General direct or through Dept. Surgeon
Report of death of officer	Telegram	Par. 83, A.R.	One to Adjutant General of the Army. Of officers on active list who have no immediate commanders and officers on retired list
Report of death of officer, enlisted man or civilian	Letter	Par. 218, M.M.D.	See model
Report of death of M.O. D.S. C.S. or SGT. 1cl Med. Dept.	Letter	Par. 219, M.M.D.	One to Surgeon General and one to Dept. Surgeon. See model
Certificate of death	Local form		To local health officer
Inventory of effects, deceased officer, enlisted man, or civilian	34 A.G.O.	Par. 84, 162, 1367, 1451, A.R.	Two to Adjutant General of the Army. One retained. See Army Regulations and Manual for Courts-Martial 482, Articles of War 125, 126
Efficiency reports of officers	429 A.G.O.	Par. 39, 829, 830, 832, 833, A.R.	One to officers' new C.O. or to surgeon of his new station; one at end of year
Efficiency reports, Army Nurse Corps	Par. 99 M. M.D.	Par. 62, M.D.	One to C.O. of hospital to which transferred; one retained
Efficiency report enlisted men. Med. Dept.	80 M.D.	Par. 46, M.M.D.	Forwarded with service record. One retained
Record of assignment and pay. Army Nurse Corps	66 M.D.	Par. 76b M.M.D.	One to Nurse's new C.O. One retained
Enlistment paper of soldier enlisting or reenlisting	22 A.G.O.	See form	As prescribed on form

NATURE	FORM NO.	AUTHORITY	REMARKS
Report of physical examination of recruit	135 A.G.O.	Note on form	The Adjutant General of the Army direct. One copy
Identification record recruit	260-261 A.G.O.	Par. 774, A.R.	One to the Adjutant General of the Army: In Philippine Dept. to the Commanding General thereof. See in instructions for making Records. H.G.O.
Designation of beneficiary	380 A.G.O.	Par. 1385, A.R.	One to the Adjutant General of the Army; Notation made on soldier's Service Record
Report of reënlistment	Letter	Par. 860, A.R.	To Commander of company last served in
Reservist's Descriptive card	443 A.G.O.	Regulations, Regular Army Reserve	One to reservist, one to office where records are kept
Notification of transfer to Army Reserve	559 A.G.O.	Regulations, Regular Army Reserve	One to Adjutant General of Army direct, one retained, see Appendix ARMY RESERVE
Allotment of pay	38 Q.M.C.	Par. 1347, 1348, A.R.	One to Quartermaster General. One retained
Discontinuance of allotment of pay	39 Q.M.C.	Par. 1351, A.R.	One to Quartermaster General of the Army. Notation of discontinuance made on copy of allotment of pay
Report of soldier's deposit	41 Q.M.C.	Par. 1361, A.R.	To Quartermaster General, copy retained
Report of transfer desertion or death of soldier having deposits	No form prescribed	Par. 1367-1368, A.R.	To Quartermaster General. In urgent cases report by telegraph
Final Statement enlisted man	370 W.D.	Par. 140, 150, A.R.	Two copies as prescribed on the form

NATURE	FORM NO.	AUTHORITY	REMARKS
Notification of discharge	3 A.G.O. -	Par. 155, A.R.	See A.R. final payment en-listed men
Discharge certificate	525, 526, 527 A.G.O.	Par. 147, A.R.	One copy only. To soldier. Signed by field officer of soldier's regiment or corps or by the C.O. when there is no field officer present
Certificate of disability	17 A.G.O.	Par. 159-161, A.R.	One to C.O.,
Furlough	66 A.G.O.	Par. 106, A.R.	As required by Army Regulations. One to C.O.
Certificate of indebtedness for hospital service	49a M.D.	Par. 1461, A.R.	
Special requisition for medical supplies	33 M.D.	Par. 485, M.M.D.	Four to Dept. Surgeon or three to Surgeon General. One returned to Surgeon to be retained
Requisition for clothing in bulk	213 Q.M.C.		Three to Quartermaster direct
Requisition for Ordnance	386 O.D.		Two to C.O., one retained
Return of Medical property	17, 17a, 17b, 17c, M.D.	Par. 507, M.M.D.	One to Surgeon General, one retained
Report of Survey	196 A.G.O.	Par. 716, A.R.	
Inventory and Inspection report	1 I.G.D.	Par. 904, A.R.	Two to inspecting officer
Special sanitary report	Letter	Par. 416, M.M.D.	To Adjutant General of the Army through military channels

NATURE	FORM NO.	AUTHORITY	REMARKS
Report on officer or enlisted man who has been in general hospital three months	Manuscript	Par. 287 M.M.D.	Two to Surgeon General
Report of appearance of epidemic disease at or near a military post or station	Letter	Par. 201 M.M.D.	One to C.O., one to Dept. Surgeon, one to Surgeon General
Report of appearance of epidemic disease in a military command en route to new station	Letter	Par. 201 M.M.D.	Three copies as in preceding case. Additional copy to surgeon of new station
Notification to local board of health of appearance of infectious disease at a military post	Letter or Local Form	Par. 203 M.M.D.	One to Board of Health
Report of Births	V.S. 109	Par. 401 M.M.D.	To director of Census
Report of Deaths	V.S. 98	Par. 401 M.M.D.	To director of Census
Report of cases of typhoid and Paratyphoid in those who have received the prophylactic	Special form for Surgeon General	Par. 189 M.M.D.	One copy direct to Surgeon General or through Chief Surgeon. The method of arriving at the diagnosis must be reported in detail
Special reports of interesting cases	Letter	Pars. 421-422, M M.D.	By attending physician to Surgeon General through medical channels
Report of changes of combination of lock of hospital safe	Letter	Par. 247, M.M.D.	To Surgeon General

ON CLOSING A HOSPITAL OR OTHER ORGANIZATION

Current periodical reports and returns to be complete		Par. 425 M.M.D.	Number of copies and disposition as at the end of stated period in each case
Retained records		Par. 821, A.R.	To Adjutant General of the Army with schedule

REPORTS MADE UNDER FIELD SERVICE CONDITIONS ONLY (Par. 558, M.M.D.)

NAME OF REPORT	FORM NO.	COPIES	TO WHOM SENT	REMARKS
Daily				
(1) Field report of sanitary personnel and transportation	82 M.D.	2	One to proper medical superior. One retained	Telegraphic report may be called for
(2) Field report of patients	83 M.D.	2	Same as above	Rendered by senior medical officer of every organization

LAST DAY OF EACH MONTH

(1) Report of divisional sanitary inspector	50 M.D.	2	One to Surgeon General through military channels. One retained	Is a report of inspections required by par. 748-a M.M.D. made from time to time during the month, modified to meet conditions by sanitary inspector. If no inspector is on duty the regimental surgeon renders
(2) Register of sick and wounded	52 M.D.	2	To the proper medical superior	Rendered by immobilized field hospitals, camp hospitals, evacuation hospitals, base hospitals, and other immobile units
(3) List of sick and wounded	53 M.D.	2	One to Div. Chief Surgeon. One retained	This report is rendered only by organizations of mobilized division or separate brigade
(4) Return of enlisted force M.D.	47-a M.D.	2	One to Surgeon General through the Dept. Surgeon or direct. One retained	For field use only

OCCASIONAL

(1) Reports of inspectors of sanitary troops	50-b M.D.	2 or 3	One to Surgeon General through military channels; one filed with Div. Surgeon When irregularities are discovered in medical administration a third copy will be sent through military channels to the medical officer commanding the organization concerned who will report by indorsement thereon what	Rendered within five days
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OCCASIONAL (Contd.)

NAME OF REPORT	FORM NO.	COPIES	TO WHOM SENT	REMARKS
			remedies he has applied or will apply to correct the irregularities or defects noted Third copy with indorsement through military channels to Surgeon General	
(2) Special reports at end of each engagement of work done during the engagement	Letter	2	One to Div. Surgeon Army Corps; one to C.S. Base Group; one retained	By each ambulance company field hospital evacuation ambulance company and evacuation hospital M.M.D. 562
(3) Report of service performed and work of the sanitary troops during a campaign.	Letter	2	One copy to Chief Surgeon Army Corps; one retained	Rendered by Division Surgeons and Surgeons, Base Groups at end of campaign. M.M.D. 562 of the work of the Medical Department under the supervision during the campaign
(4) Special report of each trip	Letter	2	One retained; one to proper medical superior	By hospital trains and trains for patients. By hospital ships and ships for patients
(5) Consolidated report of Division Surgeon and Surgeons, Line of communications	Letter	2	One to Surgeon General; one retained	By the Chief Surgeon Army Corps. (M.M.D. 561) covering the work of the Medical Department of the entire Army during the campaign, inclosing therewith the reports from the division surgeons, base group
Return of casualties	149 A.G.O.		Is made after every action in which casualties have occurred in the sanitary personnel by the commanding officer of each independent organization. Casualties pertaining to the personnel of the organization making the report only should be included. Regimental surgeons furnish regimental commanders with information necessary for the preparation of the regimental return	

196. POST RECRUITING OFFICER.

MONTHLY

NATURE	FORM	AUTHORITY	REMARKS
Report of medical examination of applicants for enlistment	265 A.G.O.	Note on form A.R. 871	To the Surgeon General of the Army not later than the 6th of the month. If no applicant is examined during the month that fact is stated by letter

TENTH, TWENTIETH, AND LAST OF MONTH

Trimonthly report of enlistments	18 A.G.O.	Note on form A.R. 857	To the Adjutant General of the Army, with enlistment papers of men enlisted during period.
Trimonthly report of applicants for enlistment	262 A.G.O.	Note on form	To the Adjutant General of the Army

WHEN THE OCCASION ARISES

Reenlistment of discharged soldiers	Letter or P. card	A.R. 860	To the soldier's last company commander
Report of physical examination	135 A.G.O.	Note on form	To the Adjutant General of the Army the day the man is enlisted. In case of first enlistment the report is accompanied by the identification Record

Rules for the examination of recruits. The rules for the examination of recruits are published in G. O. 66, 1910. See Chapter VI.

Blank forms. The following A. G. O. forms should be kept on hand by the recruiting officer:—

- No.
18. Trimonthly report of enlistments.
 22. Enlistment Paper.
 78. Letter of Inquiry, Recruiting Officer. (Supplied directly by A. G. O.)
 135. Report of Physical Examination.
 141. Application for Enlistment. (Supplied directly by A. G. O.)
 260. Identification Record Card.
 261. Photograph of Negative Jacket.
 262. Trimonthly Report of Applicants for Enlistment. (Supplied directly by A. G. O.)
 265. Monthly Report of Medical Examination, of applicants for Enlistment.
 380. Designation of Beneficiary of Officer or Enlisted Man.
- Special Regulations for Identification Records.

197. Instructions on Forms. As a rule, errors in the preparation of forms are due more to ignorance of the instructions printed on the forms than to any other one thing. **SO, ALWAYS BE THOROUGHLY FAMILIAR WITH ALL NOTES ON EVERY FORM YOU MAY PREPARE.** As well as the paragraphs of the Medical Manual pertaining thereto.

198. Descriptive card of deserter. This form, No. 95, A. G. O., is prepared by the proper company commander and signed and distributed by the post commander whenever a desertion occurs at a post. The number to be prepared is determined by the post commander, who sends them at once to such marshals, sheriffs, police officers, and such others as he may deem proper. (See A. R. 118.) The form is so simple and self-explanatory that no "model" is considered necessary.

SANITARY REPORTS IN ZONE OF INTERIOR

199. Nature of reports; retained copies. The sanitary reports called for by Army Regulations constitute a record of the sanitary conditions of a post or command month by month and should be complete either in themselves or by reference. A duplicate of each report will be retained with the medical records of the post or command. At a permanent post the duplicates will be filed in and form a part of its medical history. (M. M. D. 412.)

200. Contents of reports. Important changes in sanitary conditions occurring during the month will be fully described in the monthly report, Form 50. When, however, there has been no important change and there are no readily preventable sanitary defects remaining uncorrected, it will not be necessary to report in full under each heading of the form. Under these circumstances a general statement under each heading should be made, referring by date to the previous reports which contain more extended information on the subject. (M. M. D. 201 and 202).

201. Special sanitary reports. The medical officer, if he desires, may make important recommendations the subject of a special sanitary report. The fact that such a special report has been rendered will be referred to on the next monthly sanitary report, with a brief note as to its contents.

202. Contents. According to the headings on the form, and also (1) the dates on which the prescribed physical inspections of the various organizations of the command were made, (2) the number of new cases of venereal disease which appeared in the command, (3) the ratio of the same per 1,000 of strength, (4) the number of venereal prophylactic treatments given, (5) such recommendations as he may deem proper.

203. Action of the Commanding Officer. The commanding officer will forward the report, through military channels, to The Adjutant General of the Army, noting thereon his views and the action taken by him; and should he have deemed the action recommended by the surgeon impracticable or undesirable, he will state fully his objections. The commanding officer will furnish the surgeon with a copy of his indorsement forwarding the report. Special sanitary reports will

take the same course as the regular monthly sanitary reports. As far as practicable, intermediate commanders will correct sanitary defects, noting their action by indorsement.

204. In the case of Medical Department organizations. Sanitary inspections of a general hospital or other establishment or organization of the Medical Department will be made, under the direction of the medical officer in command, by a junior medical officer assigned to that duty, who will report in writing to the commanding officer. The latter will forward the reports, through military channels, to the Surgeon General, indicating his action by indorsement thereon. The commanding officer will keep an appropriate record of the reports and his indorsements.

205. By each Sanitary Inspector. Is made to the Surgeon General through military channels covering inspections made by him during the month, on Form 50.

206. The Report of Sick and Wounded. This is made by organizations which keep the Register of sick and wounded (see par. 159, [1]) and consists of (1). The report sheet (Form 51 M. D.), (2) the duplicates of the register cards (Form 52 M. D.), of cases admitted during the month for which the report is made (see par. 457 M. M. D.) and (3) the nominal check list (Form 51 [a] and 51 [b]) of the cards.

207. The List of Sick and Wounded.

(a) *Monthly*—this is rendered by organizations (mobile sanitary units) which keep the list of sick and wounded, by sending the original copy of the list containing the names of cases admitted or recorded for the period.

(b) *After every engagement.* An extra carbon copy of that portion of the list which contains entries of the casualties of the command will be made and sent immediately to the organization commander to enable him to prepare his return of casualties (Form 149, A. G. O.) or, if preferred, the extra carbon copy for the organization commander may be made on Form 149, direct, as the size and ruling of the two forms are similar. An extra carbon copy of that portion of the list which contains entries of the casualties from other commands will be made in like manner and immediately sent to the division surgeon in order that there may be at the headquarters of the division a check upon the names of men reported as missing on the casualty returns of the organizations to which they belong.

Stations for slightly (walking) wounded will make a single copy of the list of the sick and wounded. At the end of each day and when the station is closed the list will be sent at once to the division surgeon.

208. Reports on Changes of Station or Status. During time of peace all changes in the enlisted personnel of the Medical Department by enlistment, discharge, death, desertion, etc., and all changes in the stations of its members by departure for, or arrival from, another post or command, will be reported at once, and such other changes from the status of duty at post or with the command as may affect their availability for transfer or detached service, as sickness, confinement, furlough or absence without leave, lasting as long as ten days, will be reported on the tenth day and again upon return to a

duty status, by the officer commanding the detachment or Medical Department organization.

(a) In cases of discharge the report will show first, the soldier's character given on discharge; second, objections to his reenlistment, if there are any, otherwise the fact that there are none; third, his physical condition, good or poor; fourth, whether he is single or married; fifth, his mail address; and sixth, such other information as may be pertinent.

(b) In all cases the particulars of the changes reported will be indicated in full.

(c) From independent posts and stations these reports will be forwarded direct to the Surgeon General. In other cases they will be forwarded in duplicate to the department surgeon who will send the original without delay to the Surgeon General and retain the carbon copy for his own records.

Whenever in time of peace a soldier of the Medical Department is transferred from one station to another the surgeon of his old station will make an efficiency report of the soldier on Form 80 and attach it to the service record forwarded to the surgeon of the soldier's new station. A duplicate of the report will be attached to the retained descriptive list.

On promotion officers report to the Surgeon General date of promotion and date of acceptance, with new rank. The oath of office and acceptance of the commission are sent to The Adjutant General of the Army.

209. Muster rolls. The instructions on the muster roll form (No. 61, A. G. O., are very complete, and the "Model Remarks" published as Form No. 489, A. G. O., cover practically every entry that is ever made on the muster roll. Study carefully the instructions and the "Model Remarks" and you will have no trouble in making out the muster roll, which is one of our most important papers.

In order that all the entries that are required to be entered on the muster rolls may be made correctly and that none be omitted, it is necessary to have a simple and systematic plan for keeping the data, and for this purpose the use of the "Muster and Pay Roll Data Card," manufactured by Geo. Banta Publishing Co., Menasha, Wis., is recommended.

210. Return of the Enlisted Men of the Medical Department. This return is rendered bimonthly (Jan. 31, March 31, May 31, July 31, Sept. 30, and Nov. 30) by the immediate commanding officer of every sanitary formation in garrison. The "Instructions" on the form (Form 47, M. D.) are full and complete.

211. Corrections in Muster Rolls and Enlistment Papers. When an officer of the Army finds it necessary, on account of errors or omissions, to have changes or corrections made on enlistment papers or muster rolls that have been furnished to the Adjutant General's Office, he will hereafter forward the data pertaining to such changes or corrections directly to the Adjutant General of the Army.

212. Pay rolls. Full and complete instructions for the preparation of pay rolls are published in G. O. 40, W. D., August 30, 1916.

The remarks made in par. 209 regarding the keeping of the data used in the preparation of muster rolls, also apply to pay rolls.

213. Reports of special medical and surgical cases. When a medical or surgical case presents unusual or interesting features a special report of the same will be forwarded by the attending surgeon, through medical channels, to the Surgeon General. Copies of the clinical record (Pars. 407 to 411 M. M. D.) should be forwarded therewith.

(a) Special reports are invited on other medical, surgical and sanitary subjects which appear to merit their preparation. When they involve only professional interests they should be forwarded through medical channels, to the surgeon general.

214. Articles for publication. Medical officers will not publish professional papers requiring reference to official records or to experience gained in the discharge of their official duties without the previous authority of the Surgeon General.

215. Report of Medical Department passengers on transports. Medical superintendents of the Army transport service, on the day following the arrival or sailing of a transport, will forward direct to the Surgeon General a passenger list of the personnel of the Medical Department aboard the vessel.

216. Consolidated Reports. Department surgeons will consolidate the reports received by them (separate consolidations being made, first for officers and soldiers, second for civilians, and third for Filipino Scouts and forward the consolidated reports direct to the Surgeon General with their annual reports (Par. 370). The original reports received from posts will be forwarded with the department surgeon's consolidated reports. M. M. D. 401.

217. Births and deaths. As they occur at military posts report thereof will be made to the Director of the Census, Washington, D. C., upon blank forms furnished by him for that purpose, on requisition made by the post commander, and also to municipal and state health authorities, if desired by them. Notations will also be made on the report of sick and wounded.

218. Record of cases of typhoid and paratyphoid (Form 52). In every case of typhoid or paratyphoid fever, or suspected case of these diseases, occurring in an officer or enlisted man, a statement will be made on the register card (Form 52) showing the number of doses of vaccine given and the date of the last one. If the patient has not been vaccinated against typhoid fever a notation to that effect, stating the reason or other circumstances learned, will be entered on the register card. A report will be furnished in every case of typhoid and paratyphoid fever occurring in an officer or enlisted man or a civilian employee who has been vaccinated, describing in detail the method of arriving at a diagnosis as soon as it is made. This report will follow the form required by the office of the Surgeon General.

219. Death of civilian employee. Action by—

(a) COMMANDING OFFICER:

1. Report to The Adjutant General of the Army.
2. Disposal of remains.

(b) SENIOR MEDICAL OFFICER:

1. Report to Commanding Officer.
2. Disposal of effects.
3. Claim made within three years for proceeds.

(c) QUARTERMASTER, IF DEATH WAS DUE TO INJURY:

1. Report to Quartermaster General, in case of death due to injury.

(a) COMMANDING OFFICER

1. *Report to The Adjutant General of the Army.* When a civilian employee dies in a post or station, or with a command in the field, report to The Adjutant General of the Army will be submitted direct on Form 415, A. G. O. (G. O. 67, 1910.)

2. *Disposal of remains.* Necessary steps will be taken for interment or other disposal of remains. (G. O. 67, 1910.)

(b) SENIOR MEDICAL OFFICER

1. *Report to Commanding Officer.* Report immediately to the commanding officer in writing, the name of deceased; the department and capacity in which employed; the date, time, place and cause of death; and the present location of body. (G. O. 67, 1910, and Par. 218, M. M. D.)

2. *Disposal of effects.* The effects of a civilian dying in a hospital will be delivered to his legal representative, if claimed within a reasonable time. If not claimed within a reasonable time, they will be sold by the hospital council and the proceeds taken up and accounted for with the hospital fund. However, watches, trinkets, personal papers, and keepsakes will not be disposed of as long as there is a fair prospect of their being claimed by the legal representative. (Par. 226, M. M. D.)

3. *Claim made within three years for proceeds.* Should claim for proceeds be made within three years after disposal of effects, the same may, on the authority of the Surgeon General, be paid over to the legal representative of the deceased. (Par. 226, M. M. D.)

4. *Report to Director of the Census.* Report death to the director of the Census, Washington, D. C. (Form U. S. No. 98.) (Par. 401, Med. Dept. Manual.)

(c) Quartermaster, if death was due to injury.

Report to Quartermaster General in case of death due to injury. If death results from injury sustained in line of duty, submit within fifteen days from date of death, to the Quartermaster General of the Army, report on C. A. Form 3a. (Page 102, Cir. 2, Q. M. G. O., 1916.)

220. Death of officer. Action by—

(a) IMMEDIATE COMMANDER:

1. Telegraphing nearest relative about disposal of remains.
2. Report to The Adjutant General of the Army.
3. Report to brigade, coast artillery district, and department commanders.
4. List of effects to nearest relative.
5. Appointment of board of officers in certain cases.
6. Report and disposal of remains.
7. Council of administration.

(b) SENIOR MEDICAL OFFICER:

1. Report to Commanding Officer.
2. To Department Surgeon direct and to Surgeon General direct in care of officers of Medical Department, and veterinarians or contract surgeons.

3. Notification to embalmer.

(c) THE MAJOR, OR SECOND IN COMMAND:

Inventory of effects.

(d) QUARTERMASTER:

1. Employment of undertaker.
2. Report to Quartermaster General.

(a) IMMEDIATE COMMANDER

221.

1. *Telegraphing nearest relative about disposal of remains.* When death occurs in the United States or Alaska and early shipment is practicable, the remains will be prepared for shipment and the nearest relative notified by telegraph with request to reply by telegraph, stating whether they desire the remains shipped home at Government expense, and if so to designate the destination and name of the person to whom the remains are to be consigned. (A. R. 87.)

MODEL FORM OF TELEGRAM

Captain John R. Smith died today of typhoid pneumonia. Please wire immediately whether you wish remains shipped home at Government expense. If so, state name and address of person to whom remains are to be shipped.

J. R. JONES,
Colonel.

"MODEL" TELEGRAM TO CONSIGNEE, IN CASE OF SHIPMENT OF REMAINS

Remains of Captain John R. Smith leave 8 P. M. today via Pennsylvania Railroad; due Washington one thirty A. M. tomorrow.

J. R. JONES,
Colonel.

2. *Report to the Adjutant General of the Army.* Report without delay by telegraph, to The Adjutant General of the Army, giving place, cause, day, and hour of death, and if the officer was on the active list report must show whether or not his death was from wounds or disease contracted in the line of duty or the result of his own misconduct. (A. R. 83.)

"MODEL" FORM OF REPORT

The Adjutant General,
Washington, D. C.

Captain John R. Smith, 31st Infantry, died in post hospital at 11:31 P. M., March 6. Typhoid pneumonia in line of duty, not the result of his own misconduct.

JONES,
Commanding.

Note: In case of the death of a retired officer, the medical officer, if one be present, or any officer having cognizance of the fact, will make the above report. (A. R. 83.)

3. *Report to brigade, coast artillery district, and department commanders.* The same telegraphic report is submitted to the brigade, coast artillery district, and department commanders. (A. R. 83.)

Note: In the case of the death of an officer who has no immediate commander, the medical officer, if one be present, or any officer having cognizance of the facts will make the above reports. (A. R. 83.)

4. *List of effects to nearest relative.* If no legal representative is present to claim the effects, a list of them must be sent to the nearest relative, and if not claimed within a reasonable time, they will be sold at auction and accounted for as in the case of deceased soldiers. (See A. R. 163.) Swords, watches, personal trinkets, papers, and similar articles will be labelled with the name, rank, regiment, and date of death of owner and sent directly to The Adjutant General of the Army. (A. R. 85.)

5. *Appointment of board of officers in certain cases.* If officer was in charge of public property or funds, appoint a board of officers, three when practicable, to inventory the same and make return therefor. (A. R. 86.)

Note: If the officer's death was due to natural causes and a medical officer is present, it is neither customary nor desirable to appoint a board of officers to report upon cause of death, and whether or not it was from wounds or disease, not in line of duty and the result of his own misconduct. However, in case of death not due to natural causes a board should be appointed to ascertain and report upon the questions above stated and other facts pertinent to the case, the proceedings being forwarded directly to The Adjutant General of the Army.—Author.

6. *Report and disposal of remains.* Make to The Adjutant General of the Army, on Form 45, A. G. O., report of death and disposal of remains. (A. R. 87, G. O. 67, 1910.)

7. *Council of administration.* If the personal effects are not claimed by relatives or legal representatives within a reasonable time, appoint a council of administration to dispose of same. (A. R. 85 and 163.) (Note. In cases of this nature the same procedure is followed as in the case of deceased soldiers. See Par. 222.)

(b) SENIOR MEDICAL OFFICER

1. *Report to commanding officer.* Report in writing to the commanding officer the name, rank, and organization of the deceased; the date, time, place, and cause of death, and the present location of the body. (Par. 218, M. M. D.; G. O. 67, 1910.)

"MODEL" FORM OF REPORT

To: Commanding Officer.

Subject: Death of Captain John R. Smith, 31st Inf.

1. Captain John R. Smith, 31st Inf., died in the post hospital at 11:30 P. M., March 6, 1915, of lobar pneumonia.

2. Death was from disease contracted in line of duty, and was not the result of his own misconduct.

3. The body is at present in the hands of Jacob Templeton, Undertaker, 342 Queens Ave., New York City (or, the body is at present in the post hospital).

J. T. PERKINS,
Major, Medical Corps.

2. *Notification to embalmer.* If death occurred at the hospital, promptly notify the embalmer employed under contract, if his services are required, and see that the remains are prepared properly and in accordance with sanitary regulations. (A. R. 87.)

Note: If there should be no contract embalmer, the duty of employing an undertaker devolves upon the Quartermaster; but no undertaker will be employed whom the surgeon considers not competent. (A. R. 87.)

(c) THE MAJOR, OR SECOND IN COMMAND

Inventory of effects. As soon as possible after death of officer make, in duplicate, inventory of his effects and forward same to The Adjutant General of the Army. If legal representatives take possession of the effects, that fact must be stated in the inventory. (A. R. 84.)

Note: Form No. 34, A. G. O., may be used for making the inventory of the effects of a deceased officer, but if the effects are numerous they may be listed on letter or other paper and headed, for instance, "INVENTORY OF THE EFFECTS OF THE LATE CAPTAIN JOHN R. SMITH, 31st INFANTRY, WHO DIED AT MADISON BARRACKS, N. Y., MARCH 6, 1915."

(d) QUARTERMASTER

1. *Employment of undertaker.* If there is no contract embalmer, employ an undertaker, but no undertaker will be employed whom the surgeon considers not competent. (A. R. 87.)

2. *Report to the Quartermaster General.* Submit without delay, directly to the Quartermaster General of the Army, a written report of the disposal of the remains with an itemized statement of the cost of embalment, coffin or casket, hire of hearse, and transportation. (A. R. 87.)

222. **Death of soldier.** Action by—

(a) ORGANIZATION COMMANDER:

1. Telegraphing nearest relative about disposal of remains.
2. Effects and inventory.
3. Allotment.
4. Final statement.
5. Report of death.
6. Notification to nearest relative.
7. Effects claimed by legal representative.
8. Council of administration.

9. Watches, trinkets, etc., sent to the Adjutant General of the Army.

10. Deposits of proceeds of sale of effects.

11. Receipt for deposit.

(b) POST COMMANDER:

1. Report of death and disposal of remains.

(c) SENIOR MEDICAL OFFICER:

1. Report in writing to commanding officer.

2. Notifying embalmer.

(d) QUARTERMASTER:

1. Employment of undertaker.

2. Report of Quartermaster General.

(a) ORGANIZATION COMMANDER

1. *Telegraphing nearest relative about disposal of remains.* When death occurs in the United States or Alaska and early shipment is practicable, the remains will be prepared for shipment and the nearest relative notified by telegraph with the request to reply by telegraph, stating whether they desire the remains shipped home at Government expense, and if so to designate destination and name of person to whom remains are to be consigned. (A. R. 167.)

"MODEL" FORM OF TELEGRAM

Private John A. Smith died today. Full report follows by mail. Please wire immediately whether you wish remains shipped home at Government expense. If so, state full name and address of person to whom remains are to be shipped.

J. R. JONES,
Captain.

"MODEL" FORM OF TELEGRAM TO CONSIGNEE, IN CASE OF SHIPMENT OF REMAINS

Remains of Private John A. Smith leave eight P. M. today via Pennsylvania Railroad; due Washington one thirty A. M. tomorrow.

J. R. JONES,
Captain.

2. Effects and Inventory. Secure the effects of soldier and prepare in duplicate inventory of same on Form 34, A. G. O. (A. R. 162.)

Notes:

(a) In making the report of the Inventory of Effects of the deceased, be sure to forward TWO ORIGINAL copies. A carbon copy can be retained as a company record but carbon copies are not to be forwarded to The Adjutant General of the Army. (Cir. 41, 1910.)

(b) In the case of shipment of remains, the Inventory of Effects should show the name and the street address of the person to whom shipped.

3. *Allotment.* In case of allotment, report as expeditiously as possible to the Quartermaster General, or in the Philippine or Hawaiian Departments, to the department adjutant, the name of the deceased. (A. R. 1350.)

"MODEL" FORM OF REPORT

To: Quartermaster General.

Subject: Allotment in case of the late Pvt. John R. Jones.

In compliance with A. R. 1350, I would report that Pvt. John R. Jones, Co. "A," 1st Inf., who has an allotment of \$15.00 per month for 12 months, commencing May 1, 1915, died October 15, 1915.

4. *Final statement.* Prepare one final statement on Form 370, W. D. (A. R. 162.)

5. *Report of death.* If a medical officer has knowledge of the facts of death, secure from the post commander the report which such medical officer is required to submit to him by G. O. 6, 1910, showing:

(a) Cause of death.

(b) Whether or not it was from wounds or disease contracted in the line of duty.

(c) Whether or not it was from wounds or disease the result of his own misconduct.

If there is no medical officer having a knowledge of the facts of death, the organization commander will himself prepare the report, which, in either case, is forwarded direct to The Adjutant General of the Army with the inventory of effects and final statement. (A. R. 162.)

Effects claimed by legal representative. Should the effects be claimed by the legal representative of the deceased, the organization commander will obtain receipt in duplicate, forwarding one to The Adjutant General of the Army and retaining the other. (A. R. 165.)

Council of administration. Should the effects not be claimed within a reasonable length of time the organization commander will apply to the post commander for a council of administration to sell the effects. (A. R. 163.)

"MODEL" LETTER REQUESTING COUNCIL OF ADMINISTRATION

To: The C. O., Ft. Jay, N. Y.

Subject: Council of administration in case of the late Pvt. John Smith.

Under the provisions of A. R. 63, I would request that a council of administration be appointed to dispose of the personal effects of Pvt. John Smith, this company, who died Jan. 31/15.

Watches, trinkets, etc., sent to The Adjutant General of the Army. Watches, trinkets, personal papers, and keepsakes, will not be sold, but will be labelled with the name, rank and organization of owner and sent directly to The Adjutant General of the Army. (A. R. 163.)

"MODEL" LETTER TRANSMITTING PERSONAL EFFECTS

To: The Adjutant General of the Army.

Subject: Personal effects of Pvt. John Smith.

In compliance with A. R. 163, I am sending herewith the personal effects of the late Pvt. John Smith, of this company, as follows:

2 bundles of letters.

1 envelope containing two discharge certificates.

1 bundle of photographs.

(Note: Each bundle to be plainly marked with contents, name, rank, and organization of deceased.)

(c) SENIOR MEDICAL OFFICER

1. *Report to commanding officer.* Report in writing to the commanding officer the name, rank, and organization of the deceased; the date, time, place, and cause of death; and the present location of body.

"MODEL" FORM OF REPORT

To: Commanding Officer.

Subject: Death of Pvt. John Smith.

1. Pvt. John Smith, Co. "C," 60th Inf., died in the post hospital at 11:30 P. M., March 6, 1915, of typhoid pneumonia.

2. Death was from disease contracted in line of duty, and was not the result of his own misconduct.

3. The body is at present in the hands of C. P. Holland, Undertaker, 1347 2nd Ave., Seattle, Washington (or, the body is at present at the post hospital).

F. E. PERRY,

Major, Medical Corps.

2. *Notifying embalmer.* When death occurs at the hospital, the surgeon will promptly notify the embalmer employed under contract, if such services are required, and will see that the remains are prepared properly in accordance with sanitary regulations. (A. R. 167.)

(d) QUARTERMASTER:

1. Employment of undertaker. If there is no contract embalmer, the quartermaster will employ an undertaker, but no undertaker will be employed whom the surgeon considers incompetent.

2. *Report to the Quartermaster General.* Submit without delay, directly to the Quartermaster General of the army, a written report of the disposal of the remains, with an itemized statement of the cost of embalming, coffin, or casket, hire of hearse and transportation. (A. R. 167.)

223. Desertion. Action by—

(a) ORGANIZATION COMMANDER:

1. Loss of property.

2. Clothing abandoned.

3. Disposal of personal effects, including request for council of administration and depositing proceeds of sale with the Quartermaster.

4. Quartermaster's receipt and proceedings of council of administration to be forwarded to The Adjutant General of the Army.

5. Deserter's descriptive list.

6. Allotment.

7. Deposits.

(b) POST COMMANDER:

1. Report to The Adjutant General of the Army.

2. Report to deserter's organization commander.

3. Deserter's Descriptive List.

(a) ORGANIZATION COMMANDER:

1. *Loss of property.* Ascertain whether any property has been carried away or lost through the desertion. If so, prepare survey reports and charge on the next pay rolls value of property determined by survey. (A. R. 116 and 687.)

2. *Clothing abandoned.* Turn over to the Quartermaster the clothing abandoned, if any, with certificate showing its condition and name of deserter. (A. R. 117.)

224. Reports on change of status or station of enlisted men.

(a) In time of peace, are reported at once in cases of enlistment, discharge, death, desertion, departure for, arrival at a station and at the end of the tenth day of all cases who for 10 days or more are not available for transfer or detached service by reason of sickness, confinement, furlough or absence without leave.

(b) In cases of discharge report will show, first, the soldier's character given on discharge; second, objections to his reënlistment, if there are any, otherwise the fact that there are none; third, his physical condition, good or poor; fourth, whether he is single or married, fifth, his mail address; and sixth, such other information as may be pertinent.

(c) In cases of transfer, in time of peace, his efficiency report on form 80 M. D.

225. Discharge on Certificate of Disability. Action by—

(a) SURGEON:

1. Report to commanding officer.

2. Information to soldier's organization commander.

3. Letter to Surgeon General.

(b) ORGANIZATION COMMANDER:

1. Certificate of disability for discharge.

(c) POST COMMANDER:

1. Appointment of board of officers.

2. Papers to be forwarded to department commander.

3. Notification of discharge to surgeon.

4. Certificate of disability for discharge forwarded to The Adjutant General of the Army.

(a) SURGEON:

1. *Report to commanding officer.* Report case to the commanding officer with request that a board of officers be appointed to make the examination required by A. R. 161. (Custom.)

2. *Information for soldier's organization commander.* Furnish the soldier's organization commander a statement giving cause of disability and such other information as may be necessary for the preparation of the certificate of disability for discharge. (Custom.)

3. *Letter to the Surgeon General.* Upon receipt of the letter from the post commander reporting discharge of the soldier, have a true copy made for the hospital records and forward the original to the Surgeon General. (A. R. 160.)

(b) ORGANIZATION COMMANDER:

1. *Certificate of disability for discharge.* Prepare and send to the surgeon a certificate of disability for discharge. (Instructions on Form 17, A. G. O.) (Note: Certificate of disability for discharge will not be made in duplicate, A. R. 159.)

(c) POST COMMANDER:

1. *Board of officers.* Appoint a board of officers of not less than two medical officers to make the examination required by A. R. 161.

"MODEL" FORM OF ORDER

In compliance with A. R. 161, a board of officers consisting of:

Captain Harry F. Core, Medical Dept.

Captain Paynton C. Hall, Medical Dept.

is appointed to meet at this post at 10 o'clock A. M., September 25, 1916, or as soon thereafter as practicable, to make an examination and report upon the physical condition of Pvt. John Smith, Co. "A," 60th Inf.

The proceedings of the board will be recorded on Form 484 A. G. O.

2. *Papers to be forwarded to department commander.* Forward to the department commander the certificate of disability for discharge, accompanied by a medical history of the case and the proceedings of the board of medical officers. (A. R. 139 and 161.)

3. *Notification of discharge to surgeon.* Send to surgeon a letter setting forth the full name and rank of the soldier, the company and regiment to which he belonged, the date of discharge and the cause thereof. (A. R. 160.)

"MODEL" FORM OF LETTER

To: Surgeon.

Subject: Discharge of Pvt. John Smith.

In compliance with A. R. 160, the commanding officer directs me to inform you that Pvt. John Smith, Co. "A,"

60th Inf., was discharged on Oct. 2/15, by reason of certificate of disability on account of deficient mental development and neurasthenia.

4. *Certificate of disability for discharge forwarded to The Adjutant General of the Army.* Upon completion of the discharge papers forward the certificate of disability for discharge directly to The Adjutant General of the Army. (Instructions on Form.)

Note: As disability occurring in the service is usually made the basis of a claim for pension, special care should always be taken to state in the certificate the degree of disability, to describe particularly the disability, wound, or disease, the extent to which it deprives the soldier of the use of any limb or faculty, or affects his strength, health, activity, constitution, or capacity to labor. If the disability was incurred in line of duty, and the soldier declined treatment for the relief of such disability where treatment was directed, that fact should be set forth in the certificate for the information of the Bureau of Pensions. (A. R. 161.)

226. Insane soldier. Action by—

(a) SENIOR MEDICAL OFFICER:

1. Report to the commanding officer.
2. Information to soldier's organization commander. This is usually put on the certificate of disability when forwarded to the company commander.

(b) ORGANIZATION COMMANDER:

1. Certificate of disability for discharge. From the data given by the surgeon.

(c) POST COMMANDER OR COMMANDER OF BASE OR GENERAL HOSPITAL:

1. Board of Officers. This is usually a standing order.
2. Report to The Adjutant General of the Army.
3. Papers to be forwarded to The Adjutant General of the Army.
4. Effects to be forwarded to the Superintendent, Government Hospital for the Insane.
5. Transportation and subsistence.
6. Commutation of rations.

(d) NONCOMMISSIONED OFFICER IN CHARGE OF PATIENT:

1. Telegraphic report to The Adjutant General of the Army.
2. Report to The Adjutant General of the Army after leaving patient at the hospital.

(a) SENIOR MEDICAL OFFICER:

1. *Report to commanding officer.* Report cases to the commanding officer with request that a board of officers be appointed to make the examination required by A. R. 465. (Custom.)
2. *Information to soldier's organization commander.* Furnish the soldier's organization commander a statement giving the cause of

disability and such other information as may be necessary for the preparation of the certificate of disability for discharge. (Custom.)

(b) ORGANIZATION COMMANDER:

1. *Certificate of disability for discharge.* Prepare and send to the surgeon a certificate of disability for discharge. (Instructions on Form 17, A. G. O.) (Note: Certificate of disability for discharge will not be made in duplicate. A. R. 159.)

(c) POST COMMANDER:

1. *Board of officers.* Appoint a board of not less than two medical officers to make a critical examination of the soldier. (A. R. 465.)

2. *Report to The Adjutant General of the Army.* Submit to the Adjutant General of the Army, through military channels, a report accompanied by—

(a) Proceedings and findings of the board giving the diagnosis.

(b) A detailed account of the medical history of the case.

(c) A statement as to whether the disability was or was not incurred in the line of duty.

(d) A statement as to whether the patient, if discharged from the service, can be released from military control without danger to himself or others. (A. R. 465.)

(Note: Form 484 A. G. O., for proceedings of board of medical officers, contains headings for the statements required under (a) and (c). Consequently it is not necessary to give this information again, separately, in the above report.)

3. *Papers to be sent to the Adjutant General of the Army.* In case soldier is ordered to the Government Hospital for the Insane, send all papers, including his descriptive list, certificate of disability, and form of medical certificate required by the Department of the Interior, directly to The Adjutant General of the Army on the date of soldier's departure from post. (A. R. 465.)

"MODEL" FORM OF LETTER TRANSMITTING PAPERS

To: The Adjutant General of the Army.

Subject: Papers in the case of Pvt. John Smith.

In compliance with A. R. 466, I would transmit herewith the following papers in the case of Pvt. John Smith, Co. "A," 60th Inf., who was this day sent to the Government Hospital for the Insane, Washington, D. C.

Descriptive List.

Certificate of Disability.

Medical certificate required by the Dept. of the Interior.

Deposit Book.

4 Incls.

4. *Effects.* Prior to the departure of the soldier, prepare and sign an inventory of his effects, in duplicate, and send one copy, together with money and other valuables, by registered mail to the Superintendent, Government Hospital for the Insane, Washington, D. C., retaining the duplicate copy for the post records..

The other effects, such as clothing, will accompany the patient and attendant as baggage. (A. R. 466.)

"MODEL" FORM OF LETTER TRANSMITTING EFFECTS, ETC.

To: The Superintendent, Government Hospital for Insane.
Subject: Inventory of effects, etc., of Pvt. John Smith.

In compliance with A. R. 466, I would transmit herewith inventory of effects and postal money order for \$15, belonging to Pvt. John Smith, Co. "A," 50th Inf., who was this day sent to the Government Hospital for the Insane, Washington, D. C.

2 Incls.

"MODEL" FORM OF INVENTORY OF EFFECTS

Madison Barracks, N. Y.,

August 15, 1916.

INVENTORY OF PERSONAL EFFECTS OF PVT.
JOHN SMITH, CO. "A," 50th INFANTRY, TRANS-
FERRED TO THE GOVERNMENT HOSPITAL FOR
THE INSANE, WASHINGTON, D. C.

- 1 bundle of letters.
- 1 bundle of photographs.
- 2 discharge certificates.
- 1 safety razor.
- 1 mug, shaving.
- 1 brush, shaving.

W. A. HALL,

Col., 50th Inf., Comdg.

5. *Transportation and subsistence.* On departure of the patient from the post give such orders to the noncommissioned officer in charge as will provide for transportation for the necessary attendants to the institution and return to post, also subsistence during their absence. (A. R. 468.)

6. *Commutation for the patient.* If payment of commutation is authorized under A. R. 1223, the commutation for the patient may, upon written orders from the commanding officer, be paid in advance to, and receipted for by the noncommissioned officer to whose charge the patient is committed. (A. R. 468.)

(c) NONCOMMISSIONED OFFICER IN CHARGE:

1. *Telegraphic report to The Adjutant General of the Army.* Report to The Adjutant General of the Army, by telegraph, at least 24 hours in advance, the probable time and place of arrival in Washington. (A. R. 467.)

"MODEL" FORM OF TELEGRAM

The Adjutant General of the Army.

Washington, D. C.

Will arrive Union Station 8 A. M. tomorrow with insane patient.

KLINE,
Sergeant.

(Note: Before departure from post secure an official telegraph form, with certificate signed by the adjutant.)

2. *Report to The Adjutant General of the Army for further instructions.* After leaving the patient at the hospital report to The Adjutant General of the Army, for further instructions. (A. R. 467.)

227. Injury to civilian employee.

QUARTERMASTER:

1. *Report to the Quartermaster General of injury.* In case of injury to civilian employee who is entitled to the benefits of the compensation act of May 30, 1908, as amended, and which incapacitates for work for one day or longer, submit as soon as practicable to the Quartermaster General of the Army, report on C. A. Form 1b. (Page 102, Cir. 12, Q. M. G. O., 1916.)

2. *Report to the Quartermaster General of termination of injury.* As soon as disability from injury terminates, submit to the Quartermaster General of the Army, report on C. A. Form 2b. (Page 102, Cir. 12, Q. M. G. O., 1916.)

228. Transfer of enlisted men from one organization to another. Action by—

ORGANIZATION COMMANDER:

1. Preparation of indorsement on service record.
2. Forwarding of Service record.
3. Quartermaster property in possession of soldier.
4. Ordnance property.
5. Convictions by court-martial.
6. Allotment.
7. Deposits.
8. Efficiency report (Form 80 M. D.), when transfer does not take the men out of the Medical Department into another branch of the service. See par. 229. (c)
9. Certificate of supplies transferred.
10. Indebtedness.
11. Delinquency record.

1 and 2. *Preparation of indorsement on service record and forwarding of record.* See instructions on the form.

(Note. In case of enlistment in or transfer to the Medical Department, a copy of the service record is sent direct to the Surgeon General by the medical officer to whom the soldier first reports. Par. 41, M. M. D.)

3. *Quartermaster property in possession of soldier.* Note on descriptive list articles of quartermaster property in possession of soldier, such as trunk-locker, blankets, overcoat, poncho, slicker, and sweater. (A. R. 1023.)

4. Ordnance property.

(a) *In case of transfer from an organization not provided with unit accountability equipment.* Prepare in duplicate, invoice and receipt transfer blanks (Form 152 O. D.), indicating the destination of the soldier, and showing all articles of personal equipment which he carried with

him, or for which he may be indebted to the United States. The two transfer blanks will be signed by the accountable officer, or the issuing officer in his name, and by the soldier acknowledging the receipt of the stores, including those missing. Send one copy with the descriptive list and use the second copy as a voucher under which to drop the articles noted thereon from your return. (A. R. 1535.)

(b) *In case of transfer from an organization provided with unit accountability equipment.* The transfer blanks must be prepared by the organization commander and one copy forwarded with the descriptive list and the retained copy turned over to the post ordnance officer, or if serving away from a post, to the designated supply officer, for issue of articles to replace those noted thereon. (A. R. 1535.)

5. *Convictions by court-martial.* In case of convictions by court-martial, forward with the descriptive list authenticated copies of records of summary court or official copies of the orders promulgating the sentences in the case of convictions by court-martial other than summary court. (Note on descriptive list and G. O. 137, 1909.)

6. *Allotment.* In case of allotment make report at once to the Quartermaster General of the Army. (A. R. 1536.)

"MODEL" FORM OF REPORT

To: The Quartermaster General.

Subject: Allotment in case of Pvt. John Smith.

In compliance with A. R. 1536, I would report that Pvt. John Smith, who has an allotment of \$10 per month for 12 months, commencing March 1, 1916, was this day transferred from Co. "A," 50th Inf. to the 128th Co. C. A. C., per Par. 9, S. O. 100, Eastern Department, 1916.

7. *Deposits.* In case of deposits make prompt report directly to the Quartermaster General of the Army. (A. R. 1361.)

"MODEL" FORM OF REPORT

To: The Quartermaster General.

Subject: Deposits in case of Pvt. John Smith.

In compliance with A. R. 1361, I would report that Pvt. John Smith, who has deposits amounting to \$120, has this day been transferred from Co. "A," 50th Inf., to the 128th Co. C. A., per Par. 9, S. O. 100, Eastern Dept., 1916.

8. *Certificate of supplies transferred.* Submit to the Quartermaster in duplicate, a certificate of supplies transferred (Form 232, Q. M. C.) under A. R. 1023.

9. *Indebtedness to U. S.* Note under headings on the descriptive list soldier's indebtedness, if any, for ordnance and ordnance stores, for quartermaster supplies, and for other stoppages, fines, etc., so that the proper charges can be made on the pay rolls of the organization to which soldier is transferred.

229. *Final Statement.* (Form No. 370 War Department.) When an enlisted man is discharged his company commander will furnish him with a final statement, in duplicate a full statement in writing of the reasons why such final statement is not furnished. A final state-

ment will not be furnished to a soldier who has forfeited all pay and allowances and has no deposits due to him. If he has deposits a final statement will be issued. Read carefully the note on the final statement form and the following paragraphs of the army regulations. (1913) 135: 140: 141: 142: 152: 155: 162: 341: 345: 648: 807: 1163: 1235: 1362: 1367: 1369: 1375: 1377: 1378: 1379: 1381. Blank forms for final statements must be kept in the personal custody of company or detachment commander. Therefore they should not be kept in the field desk.

230. Furloughs. In practice this form is prepared for the Post Commander by the Company Commander, who sends it to post headquarters either with the soldier's application, or attached to an information slip, which at some posts is used instead of a written application, the slip giving information regarding the following:—

1. Purpose of the furlough.
2. Previous furloughs.
3. Strength of the company.
4. Number of men allowed on furlough.
5. Number now absent on furlough.
6. Enlistment period.
7. Date of current enlistment.
8. Has the soldier sufficient funds to pay travelling expenses

both ways?

231. Ration Return. (Form 223, Q. M. C.) In addition to rations, soap, candles, matches, toilet paper, rock salt, vinegar for animals, towels and ice, the allowance of which is prescribed in A. R. 1215 are obtained on this form.

2-2943

Q. M. C. Form No. 223.
Authorized April 22, 1913.

No.
[QUARTERMASTER'S NUMBER]

Ration Return of Detachment Medical Department.

At Camp Gaillard, C.3., from August 1, 1917, to August 10, 1917.

No. of days 10, persons present 25, No. of rations 250

Additions 76, deductions 54, net corrections 22

NUMBER RATIONS REQUIRED	GARRISON.	FIELD.	RESERVE.	TRAVEL.	FILIPINO.	
	272	----	----	----	----	TOTAL 272

No. emergency rations required -----

Riding
horses 8)

Other issues required, quantities actually required within regulation allowance: (No. of animals -----)

SOAP	CANDLES, ISSUE	CANDLES, LANTERN.	MATCHES.	TOILET PAPER	Salt Rock	Vinegar For An- imals	FLOUR FOR PASTE.	TOWELS, HUCK.	ICE.
LBS	LBS	LBS	BOXES	PAGS	lbs.	gals.	LBS	NO	LBS.
10.88	--	--	23	4	4	1	--	--	1000

The figures in the above model were obtained as follows:

(a) The enlisted strength of the detachment present and absent according to the morning report of July 31/16 was.....33

(b) Deduct from the above number of men absent according to the morning report of July 31/16, and for whom rations will not, therefore, be drawn for any part or for the whole of the 10 days, the number of men absent being (assumed) as follows:

On furlough.....	3	
Absent in confinement.....	1	
Present sick in hospital.....	4	8
		<hr/>
		25

(c) That is to say, we have 25 men for whom one ration per day must be drawn for the 10 days in the month of August. Hence the total number of rations will be, $25 \times 10 \dots\dots 250$.

ADDITIONS

For the men who joined during the month of July, from absent sick, furlough, detached service, etc., and which (let us assume) the "plus" column of "Rations" on the company morning report for July shows to be $\dots\dots\dots 76$

DEDUCTIONS

For the men who left during the month of July on account of being sent to the hospital sick, going on furlough, etc., and which (let us assume) the "Minus" column of "Rations" on the company morning report for July shows to be $\dots\dots\dots 54$

Leaving us a ("Net correction") to be added of $\dots\dots 22$
and making the total number due the detachment for the month of August $\dots\dots\dots 272$

EXTRA ISSUES

A. R. 1215 fixes the maximum allowance of soap, toilet paper, matches, etc., the commanding officer being "authorized" if he so desires, to determine the allowances within the prescribed maximum. The allowances are based either on so much per ration per so many rations, or per organization. In the case of candles and matches the allowance is left entirely to the commanding officer.

EXAMPLE (See "model" Ration Return above)

Soap. Allowance is 0.64 oz., for each ration, or 4 lbs. to 100 rations.

$272 \times 4 = 1088$, i. e., the company is entitled to 10 lbs. of soap for the month of August.

Toilet Paper. Allowance is 1000 sheets for every 60 rations.

$272 \div 60 = 4$, that is to say, the company is entitled to 4 packages of toilet paper.

Matches. Allowances of matches for lighting fires and lights, for which fuel and the illuminating supplies are issued, is such as the commanding officer may order as necessary.

232. Discharges. There are three different kinds of discharge certificates, which are used as follows:

1. *Honorable discharge.* (Form No. 525, A. G. O.) When the soldier's conduct has been such as to warrant his reenlistment and his service has been honest and faithful.

2. *Dishonorable discharge.* (Form No. 527, A. G. O., on yellow paper. For dishonorable discharge by sentence of a court-martial or a military commission.

3. *Discharge.* (Form No. 526, A. G. O.) For discharge when the soldier is discharged except as specified under 1 and 2, above. For example, when discharged under A. R. 148½.

Pars. 139-158, Army Regulations, with which company commanders and company clerks should be thoroughly familiar, cover in full the subject of discharges.

233. How requisitions are rendered for Post Medical Supplies. These requisitions are rendered in quadruplicate from posts or commands under department control, to the Department Surgeon; and in triplicate from general hospitals and independent commands directly to the Surgeon General. One copy is for the medical supply department which will make the issue, one copy for file in the office of the Surgeon General, one copy for the Department Surgeon and one copy will be returned (with the action of the Surgeon General or Department Surgeon, modifying the requisition as required) to the maker who will file it for reference with the invoices of supplies when issued.

234. Requisitions for field Medical Supplies. (Par. 489 M. M. D.) Are made when necessary to equip organizations according to the field medical supply tables, after military operations or when tables are changed, or to replace unserviceable equipment at posts.

235. How requisitions for field supplies are rendered. These requisitions are forwarded in triplicate through department or division Surgeon, or Surgeon base group, or from independent commands or stations direct to the Surgeon General, on form 35 M.M.D. Department Surgeons of Philippines, Hawaiian and Panama Canal Departments are authorized to act upon them in lieu of the Surgeon General.

236. Annual Requisition for Post Medical Supplies. (Par. 477 M. M. D.) Are rendered annually for the year beginning January 1st, unless otherwise directed by the Surgeon General, at least 20 days prior to the beginning of the year, on form 33 M. M. D.

237. Articles for which there is a specified allowance on the supply table. Will be asked for on form 33 M. M. D. except that (See par. 486 M. M. D.)

(a) Identification supplies will be asked will be asked for on quarterly special requisitions, containing no other items for issue, from New York Supply Depot.

(b) Articles to replace unserviceable property will be invariably asked for on quarterly special requisitions stating exact number and condition of unserviceable articles on hand under heading of remarks.

(c) Mineral oil, Coal, Gas and electric current for operating sterilizers, X Ray machines and other therapeutic apparatus will be obtained on request (letter) to Surgeon General or in the Philippines, Hawaiian, or Panama Canal Departments to the Department Surgeon.

(d) Supplies for posts or camps are obtained through the Surgeon of the main command unless otherwise directed (Par. 483 M. M. D.)

238. Articles not listed on the Supply Tables. These will be asked for on the annual special requisition, forwarded with the regular annual requisition. Articles asked for will be listed alphabetically and conform to the standards listed in—

(a) Articles mentioned in foot notes to tables will be obtained as directed therein, and articles for which no allowance is stated, will be asked for on quarterly special requisitions.

239. Special Requisitions for Post Medical Supplies. (Par. 482, M. M. D.) These will be made annually, quarterly or on occasion of emergency needs.

240. Requisition for Quartermaster Supplies. The following are the ways to obtain quartermaster supplies for the use of ambulance company.

1. *Expendable articles.* All *expendable* supplies (such as lye, sapolio, scrubbing brushes, corn brooms, mops, stove polish, etc., except stationery and books) are obtained on Q. M. C. Form No. 176, approved by the commanding officer. (See A. R. 1181.)

Stationery and books are obtained on Q. M. C. Form No. 204. (No fixed allowance, quantities being subject to approval of the commanding officer.)

2. *Unexpendable articles.* All *unexpendable* supplies (tents, stoves, axes, shovels, buckets, mosquito bars, etc.) with the exceptions indicated in the table below, are obtained from the quartermaster on memorandum receipt (Q. M. C. Form No. 227) (See A. R. 281; 1089-1092.)

The following table gives the blank forms used in obtaining the quartermaster supplies that are gotten right along, and the paragraphs of the Army Regulations, regarding allowances, etc., for mobile sanitary units.

Articles	Form	A.R.
Brooms	176 Q. M. C.	1181
Candles	223 Q. M. C.	1215
Clothing	213 Q. M. C.	1157
Fuel	477 Q. M. C.	1044
Forage (mounted organizations)	218 Q. M. C.	1050-1061
Ice	223 Q. M. C.	1215
Lye	176 Q. M. C.	1182
Matches	223 Q. M. C.	1215
Mops	176 Q. M. C.	1181
Rations	176 Q. M. C.	1209
Sapolio	176 Q. M. C.	1182
Scrubbing brushes	223 Q. M. C.	1181
Soap	204 Q. M. C.	1215
Stationery	223 Q. M. C.	1062
Toilet Paper	223 Q. M. C.	1215

CHAPTER V

THE SANITARY SERVICE

241. Those who perform the sanitary service. The sanitary service is performed by the sanitary troops and the American National Red Cross organizations on duty with the Army.

242. Functions of the sanitary service. The functions of the sanitary service are two fold.

(1) The maintenance of the physical strength of the troops at a maximum.

(2) The care of disabled personnel of the army.

How the physical strength of an army is maintained. To maintain the physical strength of the army it is necessary, first, to prevent the entrance into its ranks of persons physically unfit for actual military service or who cannot be trained within a reasonable period for military service, second, to remove the physically unfit from the ranks (cases of acute disabilities which recover or are remediable are restored to duty—the permanently disabled are separated from the military service), third, to prevent avoidable disabilities among troops.

To perform this service, equipment and supplies are needed, organization is essential, and accurate records of physical examinations, the preparation and preservation of records of disabilities of individuals must be made, in order that future claims against the government may be adjudicated with justice to both the individual and the government.

243. The emblem of the sanitary service. While every country has its own distinctive military insignia, as a compliment to Switzerland the heraldic emblem of the red cross on a white ground formed by reversing the Federal colors, is retained as the emblem and distinctive sign of the medical service of armies (except the Turkish).

244. How the emblem is used. With the permission of the competent military authority this emblem is shown on the flags and brassards as well as on all the matériel belonging to the medical service.

245. Brassards. Brassards are worn by sanitary personnel, fixed to the left arm, delivered and stamped by the competent military authority, and accompanied by a certificate of identity in the case of persons who are attached to the medical service of armies, but who have not a military uniform.

(a) Brassards will be issued to the uniformed personnel of the sanitary service and to chaplains by the senior medical officer of the organization with which they are on duty.

246. Certificate of Identity. (Form 61.)—This certificate is issued to those who are entitled to wear a brassard but who do not

wear a uniform, by the division surgeon, surgeon, base group, the department surgeon, or the Surgeon General, as the case may require. The certificate of identity will bear the same number as the brassard.

Name..... No.....	Certificate of identity, } Place
Organization	No. Date, 19....
Capacity	I certify that is attached to
Sex	(given name) (surname)
Age	the sanitary service of the United States Army, is au-
Color of eyes	thorized to accompany the
Color of hair	in the capacity of (Describe function).....
Height	and is entitled to the privileges and immunities pro-
Weight	vided in Chapter III of the International Red Cross
Race	Convention of 1906. A brassard, as described in
	Article 20 thereof, which bears the same number as this
Finger print } right index }	certificate, has been issued to the person named.
	Identification data:
Remarks: (Note scars, etc.)	(Sex) (Age) (Color of eyes) (Color of hair) print
Place .....	..... r. index.
Date	(Height, approx.) (Weight, approx.) (Race)
Issued by	Remarks
	(Include here notation of scars, etc., visible, when
	clothed, which will aid in identification.)
	(Signature line)
	(Title, etc., line)

To be 4 by 8 inches, perforated as indicated, bound in books to retain stubs, and printed on light weight bond paper. Certificate to be numbered at time of issue to correspond to accompanying brassard and carried in small metal container suspended around the neck.

247. Care of Certificate of Identity. The person to whom a certificate of identity is issued will retain it in his personal possession and exhibit it when called upon by competent authority to do so. Care will be exercised to prevent the certificate of identity or its container from coming into the hands of another person. The loss of a brassard or of a certificate will be investigated and reported by the immediate commander to the office which issued the lost article.

248. The display of the Red Cross Flag. The red cross flag flies only over those medical units and establishments which are entitled to be respected under the convention, and with the consent of the military authorities. It must be accompanied by the national flag of the belligerent to whom the unit or establishment belongs. (Note. At night the position of sanitary formations are marked by green lanterns. (See F. S. R. 353.)

(a) The medical units belonging to neutral countries which may be authorized to afford their services fly with the flag of the convention, the national flag of the belligerent to whose army they are attached, but having fallen into the hands of the enemy, and while in that situation, they must fly only the red cross flag.

249. Unauthorized use of the Red Cross emblem. The emblem of the red cross on a white ground and the words "Red Cross" or "Geneva Cross" shall not be used, either in time of peace or in time of

war, except to protect or to indicate the medical units and establishments and the personnel and matériel protected by the convention.

250. Legal status of the Sanitary Service. The sanitary service comes under the provisions of the International Red Cross Convention of 1906, a revision of the Geneva Convention, which include the following provisions.

251. Status of captured disabled. Belligerents treat captive disabled enemies without distinction of nationality. When sanitary units must inevitably be captured some sanitary personnel is left with them by the retreating belligerent.

a. Captured disabled enemies are held as prisoners of war.

b. Certain agreements as to exchange of disabled prisoners between belligerents or agreements to turn over disabled prisoners to a neutral state are made from time to time.

c. The commander in possession of the field, where possible, prevents pillage searches for wounded, or directs disposal of the dead after careful listing of articles of value, and the collection of identifying tags or trinkets in order that they may be returned to their relatives.

252. Status of captured sanitary organizations. These are respected and protected by belligerents unless they have lost the right to protection by doing things harmful to the enemy.

Sanitary organizations do not lose their right to protection by any of the following acts:

(1) That the sanitary personnel is armed and uses the arms to protect the wounded in their care.*

(2) That the organization is guarded by an armed guard detailed from the line.

(3) That the patients have weapons and missiles which they have not had time to turn in.

253. Guards for sanitary units. When field hospitals are not parked with divisional trains, they are guarded by ambulance companies or guards from the line. Guards for base hospitals, general hospitals and supply depots, convalescent and recruit camps, are furnished by the commander of the Army Corps, division line of communication, or other military body of which the Sanitary Corps is a part.

254. Status of captured sanitary personnel. The captured sanitary personnel, including chaplains, not members of the Red Cross Society, are not to be treated as prisoners of war. They will continue their humane duties under the direction of their captors, and while in captivity, they will draw pay from their captors, equivalent to persons of same rank in the army of the enemy. When these duties terminate, they will be restored to their own country, and shall take with them their private property, including equipment, arms, and instruments.

255. Status of captured sanitary matériel.

(a) Mobile medical units retain their matériel including their teams, irrespective of the means of transport and the drivers em-

[*Ambulance Companies, Field Hospitals are equipped with pistols. For interior guard duty, and personnel of other detachments or organizations are issued firearms by authority of the commanding officers.]

ployed, but competent military authority shall be free to use the matériel for the treatment of the wounded and sick. It shall be restored under the conditions laid down for the medical personnel, and so far as possible at the same time.

(b) The buildings and matériel of fixed establishments remain subject to the laws of war, but may not be diverted from their purpose so long as they are necessary for the wounded and the sick, but the commanders of troops in the field may dispose of them, in case of urgent military necessity, provided they make previous arrangements for the welfare of the wounded and sick who are found there.

(c) The matériel of voluntary aid societies which are admitted to the privileges of the convention under the conditions laid down therein is considered private property, and, as such, to be respected under all circumstances, saving only the right of requisition recognized for belligerents in accordance with the laws and customs of war. (A return of all captured property will be rendered to The Adjutant General of the Army, through intermediate channels, by the immediate commander of the troops making the capture.) A. R. 819.

256. Unauthorized use of sanitary matériel. In order that matériel may be entitled to the protection afforded by the Geneva convention, it must be set apart for the use of the sanitary service exclusively. To this end, ambulances, wagons, and animals with their personnel, hospital trains, ships, and boats, together with the crews for working such trains, ships, and boats, will not be diverted therefrom by commanders subordinate to the one by whom such assignment was made nor by officers of other staff departments.

CHAPTER VI

PHYSICAL EXAMINATIONS

257. The unit of military strength. The military body, viewed as an organism, exhibits members whose structures vary directly as their functions, and these members are made up of units,—the soldier; of which the officer is a specialized variant. Biologically speaking, the soldier is the unit of military structure and function; upon his integrity and fitness depend the integrity and efficiency of the military body.

258. Importance of physical examinations. Physical examinations are intended to prevent the entrance into the army of persons physically unfit to undergo the rigors and vicissitudes of active military life. These include the immature and the senile, the mentally irresponsible, the invalid and the disabled, all of whom would, if in the service, fail at a critical time when the supreme effort is called for and in addition, would require an extra supply of doctors, nurses, stretcher-bearers, ambulances, hospitals, trains and boats, medical supplies and equipment, all of which are an embarrassment to strictly military operations.

As disabilities arise after entrance into the military service, physical examinations are required not only of those who come upon sick report but of those apparently well, in order to discover incipient disabilities and either cure them or remove the individuals from active military service.

259. Recruiting.

NOTE: (Physical examinations for recruiting are conducted and governed by the following: General Orders 154, 1905, and 197, 1906. Circulars,—War Department 15, 1907, and 5 and 26, 1908, and Army Regulations 846, 849, and 1410.)

260. The Recruiting Service. The recruiting service is the system of obtaining applicants for enlistment, and is conducted according to the "Regulations for the Recruiting Service" issued by the Adjutant General of the Army, and by Army Regulations (see par. 840-871 incl.). It is organized into recruiting stations, recruiting depots, and post recruiting offices.

261. The enlisting officer. Enlisting consists of administering the oath of enlistment, and, as the one administering the oath is held responsible for the physical fitness of the recruit, that duty devolves upon the one making the physical examination,—the medical officer.

262. General qualifications for enlistment.

Any male under {	A citizen of the U. S. or who has legally de-
35 over 18 }	clared his intention of becoming one.

Especially promising candidates under 18 may be accepted with consent of father, only surviving parent, or guardian.

Able-bodied, Free } from disease }	Evidence obtained by physical examination.
Of good character, } Temperate habits }	Evidence to be furnished by applicant.

263. General disqualifications for enlistment.

Insane persons.

Intoxicated persons.

Deserters—military or naval.

Persons who have been convicted of a felony.

Persons who have been imprisoned, under a sentence of a court, in a reformatory, jail or penitentiary, for a crime or misdemeanor.

In time of peace for 1st enlist- ment.	}	Persons over 35 years of age.
		Persons not citizens of U. S. (except Indians)
		Persons who have not legally declared in- tention to become a citizen, or who cannot
		speak, read, and write the English language.

Minors under 18 years of age without written consent of father—only surviving parent—legal guardian.

Minors under 16 years of age except by special authority of the Adjutant General.

Persons not physically fit for military service, or having a disease or condition which will develop into a disability.

- (a) *Exception:* Enlisted men of good character and faithful service who, at the expiration of their terms, are undergoing treatment for injuries incurred or disease contracted in the line of duty, may be reënlisted if they so elect, and if the disability prove to be permanent, they will subsequently be discharged on certificates of disability.

264. Cases requiring special authority of the Secretary of War for reenlistment.

1. Applicants who have been discharged prior to expiration of term of service,—except for convenience of Government or by purchase.
2. Applicants who have been discharged with character other than good or its equivalent, or with certificate bearing notation "Not recommended for reënlistment."
3. Applicants over 40 years of age discharged as privates, who have been out over three months. Such applications must show that the reënlistment will be for the good of the service.
4. Applicants who have deserted the service of the U. S. in time of peace and whose service during last enlistment was not honest and faithful. Recommendation should depend upon subsequent conduct, prior to application.

5. Applicants who cannot pass the required examination in all respects. Applicants must show existing defects will not prevent full performance of military duty.

265. **Application for reenlistment prior to discharge.** An enlisted man not under treatment for infirmities contracted in line of duty that may raise a question of physical eligibility to reenlistment, but not such as to prevent his performing the duties of a soldier, may be reenlisted by authority of the War Department. Application is made through the surgeon and proper military channel in time to receive a decision before the date of discharge.

266. **Special physical qualifications.** The function determines the standard.

(a) *Height and weight.* For Infantry, Coast Artillery, and Engineers the height must be not less than sixty-one (61) inches and weight not more than one hundred and ninety (190) pounds.

For Cavalry the height must be not less than 5 feet 4 inches and not more than 5 feet 10 inches, and weight not more than one hundred and sixty-five (165) pounds.

For Field Artillery the height must be not less than 5 feet 4 inches and not more than 6 feet and weight not more than one hundred and ninety (190) pounds. For the mountain batteries the height must be not less than 5 feet 8 inches.

A variation not exceeding a fraction of an inch above the maximum height given for Cavalry and Field Artillery is permissible if the applicant is in good health and is in other respects desirable as a recruit.

The minimum weight for all arms of the service is one hundred and ten (110) pounds, subject to variations below that standard as explained herein.

(b) *The Infantryman.* Generally speaking, the infantryman must have well-formed, well-arched, elastic, and strong feet. He must be well muscled and supple; neither adipose nor lean. He must have excellent heart and lungs in a capacious chest to supply him in his exertions; a good frame to carry his pack, a good eye to sight his rifle, a good ear to hear the enemy patrol, good teeth to chew and good digestion to assimilate his plain but nourishing rations. He must be intelligent and have the stamina of manhood in its prime to bear with triumphant fortitude the hardships of service, neither inclining to the tenderness of youth nor the submission of age. He must not be so tall as to be a burden to himself nor so short as to be unable to bear his portion of the company duties.

(c) *The Cavalryman.* The cavalryman need not have the frame and musculature of the infantryman nor be so tall nor so heavy, and because of his being mounted there is less need of his having perfect feet and legs. He needs suppleness of the waist and strength of arm. While he may fight in recontre melee he usually fights on foot in positions consecutively distant, whither he rides, and in formations usually near where his horse is stationed. He needs a keen eye and ear for scouting and patrols and he may be of younger age than the

infantryman as his service calls for that dash and reckless daring in swift action which is ever the delight of youth.

(d) *The Field Artilleryman.* The field artilleryman combines the functions of the foot and mounted troops according to whether he serves with a mountain or light battery.

(e) *The Coast Artilleryman.* The coast artilleryman leads a more sedentary life than the preceding. His duties are laborious but they are performed amid surroundings and under circumstances akin to many vocations in civil life. He is not exposed to the hardships of short rations nor required to endure the rigors of inclement weather continuously without sufficient shelter or dry clothing nor is he required to undergo forced marches as a preliminary to personal combat with the foe. He must have a well-built frame, of good height, and well muscled. He need not be so agile and except under certain circumstances where men are selected for special duties he does not need keen vision nor hearing; indeed if he has the latter the concussion of big guns firing will soon render him hard of hearing. He must not be a stripling nor yet so old as to be incapable of training himself to his special duties.

(f) *The Aviator.* The aviator requires excellent vision and hearing, a sound heart and lungs, resilient arteries, mental poise and an accurate sense of equilibrium combined with supreme courage and daring to enable him to undergo the great barometric and meteorologic changes in his flights, to maneuver his plane and his guns amid the clouds or to drop bombs, or act as aerial spy scanning the enemy's movements which he must signal to his own lines; and of which he must make pictures.

His duties call for youth in early manhood; that age of superlative self-confidence, and a high degree of intelligence enabling him to cope with the sudden crises of his service.

(g) *The Sanitary Trooper.* The sanitary trooper is a man of varied attainments, trained to take his place in the hospital service, where he may be called upon to fill prescriptions, nurse the disabled, be operating assistant, or prepare diets; he also may be called upon for outside sanitary duties in connection with posts and camps requiring exposure to epidemic diseases, or the most exacting and self-sacrificing of all duties, the rescuing of wounded on the battle field. There amid a rain of missiles to which he must remain indifferent he applies tenderly and skillfully the first aid treatment which saves a life, then laboriously carrying his man back to succor and safety only to repeat his act many times till nature herself puts a restraining hand upon his human exertions. He must therefore be intelligent, resourceful, and able-bodied, and since he accompanies the troops which he serves he must have the qualities of an infantryman and be able to ride well.

267. General physical qualifications. The various parts of the body should be well proportioned, the head symmetrical, the chest developed and well formed, the abdomen lank, and the limbs shapely with firm, well-developed muscles. The carriage should be erect

and sprightly without any lack of control; the expression of the face should indicate mental and physical health and vigor; there should be no repulsive deformity; the manner should be cheerful and alert without exaggeration or sluggishness; the skin should be clean, free from eruptions, and without the pallor of disease, the characteristic appearance of the drunkard, or the peculiar sallow tint and the distinctive hypodermic scars of the drug habitué.

By careful observation and the exercise of good judgment the experienced and painstaking recruiting officer will commonly be able to exclude the unsuitable, the vagabond, and the criminal.

(a) Table of physical proportions for height, weight, and chest measurement, during the existing emergency.

Height		Weight (Pounds)	Chest Measurement	
<i>Feet</i>	<i>Inches</i>		At Expiration (Inches)	Mobility (Inches)
5-1/12	61	118	31	2
5-2/12	62	120	31	2
5-3/12	63	124	31	2
5-4/12	64	128	32	2
5-5/12	65	130	32	2
5-6/12	66	132	32-1/2	2
5-7/12	67	134	33	2
5-8/12	68	141	33-1/4	2-1/2
5-9/12	69	148	33-1/2	2-1/2
5-10/12	70	155	34	2-1/2
5-11/12	71	162	34-1/4	2-1/2
6	72	169	34-3/4	3
6-1/12	73	176	35-1/4	3
6-2/12	74	183	36-1/4	3
6-3/12	75	190	36-3/4	3-1/4
6-4/12	76	197	37-1/2	3-1/2
6-5/12	77	204	37-1/2	3-3/4
6-6/12	78	211	38-1/4	4

(b) The following variations below the standard given in the table are permissible, when the applicant is *active, has firm muscles, and is evidently vigorous and healthy*:

Height, Inches	Chest at Expiration, Inches	Weight Pounds
61 and under 64	1	8
64 and under 68	2	10
68 and under 69	2	12
69 and under 70	2	15
70 and under 73	2	20
73 and upward	2	24

To be acceptable, men below 64 inches in height must be of good physique, well developed, and muscular.

Variations in weight above the standard are not disqualifying, unless sufficient to constitute obesity. Unless exceptionally well proportioned, men above 6 feet 6 inches in height should be rejected.

268. The Minimum Visual Qualifications

(a) The minimum visual requirements for recruits.

1. For the line of the Army and for the Signal Corps: 20/40 for the right eye and 20/100 for the left, provided that no organic disease exists in either eye.

a. Recruits may be accepted for the line of the Army when unable with the right eye to read correctly all of the letters on the 20/40 line, provided that they are able to read some of the letters on the 20/30 line.

2. For the Ordnance Department and for the Medical Department: 20/70 in each eye, correctible to 20/40 with glasses, provided that no organic disease exists in either eye.

(b) The minimum visual requirements for National Army, 20/40 in the better eye and 20/100 in the worse eye.

269. Special Disqualifications

Underweight. A superficial examination of many applicants determines the fact of their unfitness; they are undersized, under weight, undeveloped, sallow, or pale and scrawny, poorly nourished, with thin, flabby muscles, and are manifestly lacking in stamina and resistance to disease. The rejection of such applicants for "poor physique" is not sufficiently exact, and the medical examiner should record as the disqualifying cause in each case some specific pathological condition, if such can be found, or "under weight," "deficient chest measurements," "deficient muscular development," "deficient nutrition," or such other definite disqualifying conditions as may be found to exist.

Obesity. Obesity is a cause for rejection when so marked as to interfere with marching or other military duties.

Immaturity. Minors should not be enlisted, even when such enlistments are permissible, unless their physical development is so nearly that of full maturity as to give reasonable assurance that they are fit for the military service.

The physical evidences of maturity may be summed up as follows: The wisdom teeth are sometimes, but not always out; there should be some beard upon the face, hair under the arms, and a full growth of hair around the genitals extending upwards on the abdomen toward the navel. In adults the skin of the scrotum has lost its soft texture, smooth surface, and pinkish hue and has assumed a wrinkled surface with a darker tint than that of the surrounding skin.

GENERAL DISEASES DISQUALIFYING

270: General diseases causes for rejection:

Chronic malarial poisoning resulting in marked cachexia, grave anemia, or splenic enlargement.

Tuberculosis of whatever degree and whether general or localized.

Recurrent attacks of rheumatism and chronic articular rheumatism.

Malignant tumors of all kinds.

Constitutional syphilis.

271. Mental and Nervous Disabilities

(a) *Anatomical stigmata of degeneracy.* Cranial abnormalities in outline, capacity or dimensions; excessive development of the occipital protuberance and ridges, the frontal eminences, and the mastoid processes; reduction of the facial angle; asymmetrical facial development; lower jaw disproportionately large and prognathic; hard palate sharply vaulted; dental arches narrowed or angular; teeth defective or misplaced; ears disproportionate in size or malformed; extreme refractive anomalies and strabismus; deviation of the nose; septal deformities; harelip; cleft palate; remnants of branchial clefts; spina bifida; sacral growths of hair; deep sternal furrows and concavities; disproportion between thorax and abdomen; upper and lower limbs disproportioned to each other or to the trunk; abnormality in size of hands or feet; tendency to left sided overdevelopment; deformities of the fingers syndactyly; excessive length or shortness of the fingers; undersize of the ring and little fingers; genitalia undeveloped; hypospadias; scrotal fissure; albinism; melanism; multiple naevi; defective development of hair and nails.

(b) *The degenerate physique* as a whole is often marked by diminished stature and inferior vigor; males may present the general body conformation of the opposite sex, with sloping, narrow shoulders, broad hips, excessive pectoral and pubic adipose deposits, with lack of masculine hirsute and muscular marking.

(c) *Functional stigmata:* Defective mental qualities; moral delinquencies, such as willfulness, deceitfulness, indecency; stammering, urinary incontinence; regurgitation and rechewing of food; color blindness; perverted tastes and cravings leading to alcoholism and drug habits; sexual perversion.

In estimating the value of the various marks of degeneracy, the occurrence of a very few in any individual case would not justify classification of the case as that of a defective. The presence, however, of numerous stigmata indicates an unstable nervous organization that is disqualifying for the military service.

(d) *Chronic alcoholism.* This subject should be carefully considered in the case of every applicant for enlistment, and as answers to questions regarding the alcoholic habit are frequently made with intent to deceive, the recruiting officer should be on the alert to detect the physical evidences of the disease. The suffused eye, the prominent superficial blood vessels of the nose and cheek, the flabby, bloated, reddened aspect of the face, and the purplish discoloration of the

mucous membrane of the pharynx and of the soft palate are well-known characteristics of the well-fed habitué. Another type, quite as common, is the poorly nourished drunkard, with pale, sodden, ashen complexion and clammy skin. Muscular tremor should always be looked for in the protruded tongue and the outstretched fingers; it is also noticeable in lack of control when the applicant attempts to sign his name. It is always ground for suspicion and a valuable indication of chronic alcoholism.

(e) *Drug habit*: The morphine habitué usually takes his dose by means of a hypodermic syringe, and a careful inspection of his skin will show black dots representing old needle punctures, or small smooth, oval, white scars of multiple abscesses resulting from the use of a dirty instrument; these marks are usually found on the thighs or left arm of a right-handed person. There is sometimes present a peculiar pallor and dryness of the skin. In morphine users the pupil is habitually contracted. In the cocaine habitué it is usually widely dilated.

(f) *Insanity, general paralysis, epilepsy, chorea, and somnambulism*, are causes for rejection.

272.

Dermal Disqualifications

(a) Eczema of long standing or rebellious to treatment, chronic impetigo, extensive psoriasis and ichthyosis, pemphigus, lupus, and sycosis.

(b) *Acne* is not a cause for rejection unless situated upon the face and so pronounced as to amount to positive deformity.

(c) *Elephantiasis* and ulcerations of the skin not amenable to treatment, or those of long standing, or of considerable extent, or of malignant origin, are causes for rejection.

(d) *Scars*. Extensive, deep, or adherent scars that interfere with muscular movements or with the wearing of military equipment, or that show a tendency to break down and ulcerate, are causes for rejection.

(e) *Nævi and other erectile tumors* are causes for rejection if extensive, disfiguring, or exposed to constant pressure.

(f) *Tattooing*. Obscene, indecent, or offensive tattooing is a cause for rejection.

(g) *Vermin*. As a general rule applicants infested with vermin should be rejected, but to desirable men who are evidently more unfortunate than habitually filthy an opportunity to rid themselves of the parasites may be given.

(1) *Pediculosis*. There are three varieties, the pediculus capitis or head louse, found upon the scalp region and only accidentally and temporarily on other parts; the pediculus corporis or body louse, inhabiting the general body surface or clothing, and the pediculus pubis, or "crab" louse, found especially in the pubic region, but also on other parts where there are short stiff hairs, as the axillæ, the breast, the hairy parts of the legs, and the eyebrows. The body louse is the largest of the three and the pubic or "crab" louse the smallest.

The ova or "nits" are easily visible to the naked eye as minute grayish pear-shaped bodies attached to the hair shafts. Pediculi are blood suckers, their presence producing a local skin irritation. "Vagabond's skin" is a condition produced by the constant irritation from pediculi and is characterized by deep brown blotches usually most numerous on the trunk.

2. *Scabies or itch* is a contagious parasitic disease, characterized by small itching points between the fingers, on the hands, wrists, axillary folds, lower abdominal, genital, and anal regions, and the presence of nits and the mature *acarus scabici*.

(h) *The scalp*: Tinea in its various forms, malignant tumors and all other tumors of sufficient size to interfere with the wearing of military head gear are causes for rejection. Temporary falling out of the hair following acute disease is not a cause for rejection, but permanent baldness (alopecia) when involving a considerable portion of the scalp should disqualify.

273.

Cranial Disqualifications

(a) *The skull*: Imperfect ossification of the cranial bones and the persistence of the anterior fontanelle. Extensive cicatrices, especially such adherent scars as show a tendency to break down and ulcerate. Depressed fractures of the skull, particularly those causing symptoms from pressures in the motor region. Monstrosity in the size of the head (due to hydrocephalus, leontiasis or acromegaly).

274.

Aural Disqualifications

(a) The total loss of an ear, marked hypertrophy or atrophy, and disfiguring deformity of the organ are causes for rejection.

(b) Atresia of the ear canal or tumors of this passage are causes for rejection.

(c) Chronic suppuration of the middle ear is a cause for rejection. Cases of perforation of the membrana tympani, where the active process has entirely subsided and cicatrization has taken place, may be accepted provided the hearing is not below the standard.

Mastoiditis, acute or chronic, is a cause for rejection.

275.

Facial Disqualifications

(a). *Extreme ugliness*, either as a result of atrophy of a part of the face, or on account of a lack of symmetrical development, is a cause for rejection.

(b) *Unsightly deformities*, such as large birthmarks and large hairy moles, mutilations due to injuries or surgical operations, tumors, ulcerations, and fistulae, persistent neuralgia, tic douloureux, and paralyses of central nervous origin are causes for rejection.

(c) *Ununited fractures* of the maxillary bones, deformities of either maxillary bone interfering with mastication or speech, extensive exostosis, caries, necrosis, and osseous cysts are causes for rejection.

(d) Chronic arthritis or the temporomaxillary articulation, badly reduced or recurrent dislocations of this joint and ankylosis of it, complete or partial, are causes for rejection.

276.

Ocular Disqualifications

(a) *Color blindness* in the case of applicants for enlistment in those branches of the service for which color blindness is specifically declared by orders or instructions from the War Department to be disqualifying.

(b) *Asthenopia* accompanying any ocular defect is a cause for rejection for any branch of the service.

(c) Complete or extensive destruction of the lids, disfiguring cicatrices, adhesion of the lids to each other or to the eyeball, marked inversion or eversion of the eyelids, trichiasis, ptosis, blepharospasm, and chronic blepharitis are causes for rejection.

(d) *Epiphora* and chronic dacryocystitis are causes for rejection.

(e) Chronic conjunctivitis, acute or contagious trachoma, and pterygium extending upon the cornea are causes for rejection.

(f) Chronic keratitis, deep ulcers of the cornea, staphyloma, and corneal opacities encroaching on the pupillary area and reducing the acuity of vision below the standard are causes for rejection.

(g) Irregularities in the form of the iris and anterior or posterior synechiæ sufficient to reduce the visual acuity below the standard are causes for rejection.

(h) Opacities of the lens or its capsule, sufficient to reduce the vision below the standard, and progressive cataract of any degree are causes for rejection.

(i) Extensive coloboma of the choroid or iris, absence of pigment, extensive or progressive choroiditis and glaucoma are causes for rejection.

(k) Retinitis, detachment of the retina, neuroretinitis and optic neuritis, and atrophy of the optic nerve are causes for rejection.

(l) Loss or disorganization of either eye and pronounced exophthalmos are causes for rejection.

(m) Pronounced nystagmus and permanent or well-marked strabismus are causes for rejection.

277.

Nasal Disqualifications

(a) Loss, malformation and deformities that interfere with speech or breathing, and fetid discharge are causes for rejection.

(b) Obstruction due to septal deviation, hypertrophic rhinitis, or other causes, if irremediable and sufficient to produce mouth breathing, are cause for rejection. Nasal polypi, when operable and not associated with sinus disease, are not disqualifying.

(c) Chronic suppurative conditions of the maxillary antra, the frontal and sphenoidal sinuses and ethmoidal cells are causes for rejection.

278.

Oral Disqualifications

(a) *Lips*. *Harlip*, loss of the whole or a part of either lip, unsightly mutilations of the lips from wounds, burns, or disease, and pronounced alveolar pyorrhea are causes for rejection.

(b) *Teeth*. The loss of teeth in excess of the standard fixed by Circular 60, War Department 1906, is disqualifying. (Note: This should be decided by a dental surgeon. *Author*.)

(c) *Tongue*. Malformation, partial loss, atrophy or hypertrophy of the tongue, split or bifid tongue, or adhesions of the tongue to the sides of the mouth so as to interfere with mastication, speech, or swallowing are causes for rejection.

Malignant tumors of the tongue and benign tumors of it that interfere with its functions are causes for rejection.

(f) *Special*. Stammering, if pronounced, is a cause for rejection.

(g) *Salivary glands*. Ranula, if at all extensive, malignant tumors, and salivary fistula are causes for rejection.

(h) *Palate*. Perforation or extensive loss of substance of the hard or soft palate, extensive ulceration of the soft palate, extensive adhesion of the soft palate to the pharynx, and paralysis of the soft palate are causes for rejection.

279.

Cervical Disqualifications

(a) *Cervical adenitis* depends upon a variety of causes, among which tuberculosis is frequent. If the condition is of benign origin, such as dental caries, it is not disqualifying, but if tuberculosis is suspected, rejection is demanded. Adenitis of the submaxillary, parotid, and auricular region is usually of benign origin; in the clavicular and lower carotid regions it is frequently tubercular. Adherent and disfiguring scars in this region from disease (tuberculosis), injuries, or burns are causes for rejection.

(b) *Extensive or progressive goitre*, interfering with breathing or with the wearing of ordinary clothing, is a cause for rejection; so also are exophthalmic goitre and torticollis.

(c) *Larynx*. Chronic laryngitis, syphilis, and tuberculosis of the larynx, stricture of the larynx, and aphonia are causes for rejection.

(d) *Pharynx*. Malformations and deformities of the pharynx and stenosis of it from adhesions or cicatricial contractions, of sufficient degree to interfere with function, are causes for rejection.

(e) Post-nasal adenoids, interfering with respiration or associated with progressive middle-ear disease, are disqualifying.

(f) Chronic enlargement of the tonsils sufficient to interfere with speech or swallowing is disqualifying.

(g) *Oesophagus*. Stricture or pronounced dilation of the oesophagus is a cause for rejection.

280.

Thoracic Disqualifications

(a) The chest contains the vital organs of circulation and respiration; it is therefore essential that it be well developed and justly proportioned to the other body measurements. The normal adult chest is oval in shape, with the long diameter transverse and in relation to the short or antero-posterior diameter as ten to seven. Any marked deviation in form, either a flattening of the chest or more especially a

persistence of the round or infantile type, is an element of weakness. Abnormal development, such as pigeon breast, funnel chest, or rachitic chest, is also to be regarded with suspicion as such conditions usually coincide with a somewhat enfeebled constitution and a predisposition to disease of the lungs.

(b) *Congenital malformations* and acquired deformities that result in reducing the chest capacity and diminishing the respiratory functions, or such as produce visible disfigurement when the applicant is dressed, are causes for rejection.

(c) *Pronounced contraction* of the chest, with adhesions following pleurisy, is a cause for rejection.

(d) *Deformities of the scapulæ* sufficient to interfere with the carrying of military equipment, absence or faulty development of the clavicle, old fracture of the clavicle where there is much deformity or interference with the carrying of military equipment, ununited fractures, and partial or complete dislocation of either end of the clavicle are causes for rejection.

(e) *Suppurative periostitis*, and caries or necrosis of the ribs, the sternum, the clavicles, or the scapulæ are causes for rejection.

(f) *Old fractures* of the ribs with faulty union, interfering with function, are a cause for rejection.

281. Pulmonary Disqualifications

(a) Chronic bronchitis and chronic pneumonia, pulmonary emphysema, asthma, chronic pleurisy, and pulmonary tuberculosis, are causes for rejection.

(b) *Signs of pulmonary tuberculosis*. Undue prominence of the collar bone on one side, caused by a deepening of the hollow above and a flattening of the space beneath; a wasting of the muscles of the shoulder girdle on one side as evidenced by the excessive prominence of the shoulder and shoulder blade; a history of recent loss of weight; associated with long and severe cough and night sweats. In suspected cases the afternoon temperature should always be taken.

282. Cardiac Disqualifications

(a) (Transposition of the heart without functional trouble is not a cause for rejection.)

(b) *Hypertrophy and dilation* of the heart, manifested by a notable increase in the area of cardiac dullness or flatness, and all valvular diseases of the heart are causes for rejection.

(c) *Pronounced tachycardia* and *marked arrhythmia* of the heart's action are causes for rejection.

(d) *Aneurism* of whatever variety or situation is disqualifying.

283. Abdominal Disqualifications

(a) *Wounds, injuries, cicatrices, and muscular ruptures* of the abdominal walls sufficient to interfere with function, and fistulæ from visceral or bony lesions are causes for rejection.

(b) *Hernia* is a cause for rejection, although, in the absence of instructions from the War Department to the contrary, soldiers with

previous service may be accepted with small hernias that produce no symptoms.

(c) *Chronic diseases of the stomach and intestines*, such as chronic dyspepsia, gastric ulcer, and dysentery, affecting the general nutrition, are causes for rejection.

(d) *Uncinariasis* (ancylostomiasis) if attended with marked anæmia or other evidence of grave constitutional disturbances, is disqualifying; but applicants with recent uncomplicated infections amenable to treatment may be accepted.

Applicants accepted in States in which uncinariasis is prevalent and who present symptoms of anæmia should be placed under observation for uncinariasis.

(e) *Chronic appendicitis and chronic enlargement of the liver or spleen* are causes for rejection.

(f) *Marked protrusion of the abdomen* due to fatty deposits localized in that region is cause for rejection.

284.

Spinal Disqualifications

(a) *Curvature of the spine* (postural kyphosis and scoliosis) not interfering with function and of a degree so moderate as to be unnoticeable when the applicant is dressed is not a cause for rejection.

(b) *Fractures, dislocation, and caries* (Pott's disease) are causes for rejection.

285.

Pelvic Disqualifications

(a) *Malformations and deformities* of the pelvis sufficient to interfere with function are causes for rejection.

(b) *Fistula in ano, and stricture, and prolapse of the rectum* are causes for rejection.

(Fissure of the anus is not ordinarily disqualifying.)

(c) *Hemorrhoids* sufficient in size to produce symptoms are cause for rejection.

286.

Genito-Urinary Disqualifications

(a) *Kidneys: Acute or chronic nephritis*, definitely established by urinary examination, is a cause for rejection.

(*Transient albuminuria* unaccompanied by other evidence of kidney disease is not disqualifying.)

(b) *Floating kidney, hydronephrosis, pyonephrosis, and renal calculi* are causes for rejection.

(c) *Bladder*: Chronic cystitis, vesical calculi, incontinence of urine, and retention of urine are causes for rejection. Urinary incontinence should be suspected if the clothing of the applicant emits a urinous odor.

(d) *Urethra*: Epispadias is a cause for rejection. Hypospadias is disqualifying only when the urethral opening is so small as to render micturition difficult or when it is so far back that the stream of urine cannot be ejected normally.

(e) Urethral fistulæ and urethral strictures sufficient to produce symptoms are causes for rejection; so also are chronic prostatitis and prostatic calculi and perineal urinary fistula.

(f) *Penis*: Hermaphroditism and absence or total loss of the penis are causes for rejection.

(g) Phimosi is a cause for rejection only when it is complete; that is, when the glans penis can not be uncovered.

(h) *Scrotum and testicles*: Varicocele is not a cause for rejection unless it is painful or so large as to interfere with locomotion. Varicocele seldom constitutes a disability, and frequently occurs among the most robust men, often without their being aware of its presence until attention is called to it. The existence of a varicocele should always be noted as well as the statement of the applicant as to whether or not it has ever given pain or other symptoms.

(Simple hydrocele of the cord of tunica vaginalis, if of moderate size and unaccompanied by subjective symptoms, is not a cause for rejection.)

(i) Pronounced atrophy of both testicles or loss of both the organs, due to operation or to accidental cause, is disqualifying. (The loss or atrophy of one testicle, the other being normal, is not disqualifying.)

(k) Undescended testicle is a cause for rejection when this organ is in the inguinal canal, or when outside the canal lying against the pubic bone, or when, as is frequently the case, it is associated with inguinal hernia.

(l) Chronic orchitis or epididymitis is a cause for rejection. (Spermatorrhoea is not a cause for rejection.)

(m) *Syphilis* is a cause for rejection. The primary sore (chancre) of syphilis is usually single and appears at the point of infection from ten days to six weeks after exposure. It usually ulcerates, becomes indurated, and causes a painless enlargement of the neighboring lymphatic glands. From one to three months later the secondary symptoms appear and are manifested by fever, general enlargement of the lymphatic glands, especially at the back of the neck and in the groins, a general skin eruption, copper colored, symmetrical, and not attended with itching, ulcers on the tonsils, mucous patches in the mouth, condylomata (moist wart-like growths) about the anus, scabs in the hair, and falling of the hair. After an interval ranging from several months to twenty years tertiary symptoms may appear; these are characterized by deep ulcerations in the bones of the nose and of the hard palate, and by lumps (gummata) involving various parts of the body.

Gonorrhoea is a cause for rejection. See par. 313½ (c). In the absence of discharge from the urethra, gonorrhoea may be suspected by a peculiar swelling or pouting of the lips of the meatus and an unusual amount of redness in this region. In such cases, repeated stripping of the penis will usually demonstrate the discharge.

Chancroids disqualifying. In cases where the foreskin is long or tight, the glands may sometimes show excoriated patches (herpes) which are entirely innocent.

287. Disqualifications of the Extremities

All anomalies in the number, the form, and the proportion of the extremities, producing noticeable deformity or interfering with function, are causes for rejection.

Deviation of the normal axis of the forearm so marked as to interfere with the proper execution of the manual of arms is a cause for rejection.

Atrophy of the muscles, either congenital or acquired, is a cause for rejection.

Old ununited fractures, fractures with shortening or callous formation sufficient to interfere with function, old dislocations, unreduced or partially reduced, complete or partial ankylosis of a joint, and relaxed articular ligaments permitting of frequent voluntary or involuntary displacement are causes for rejection.

Reduced dislocations and united fractures with incomplete restoration of function are causes for rejection.

Amputation of an essential portion of a limb and resection of a joint are causes for rejection.

Excessive curvature of a long bone, and extensive, deep, or adherent scars interfering with motion are causes for rejection.

Severe sprains are causes for rejection.

Chronic oedema of a limb, chronic synovitis, and floating cartilage in a joint are causes for rejection.

Varicose veins in an extremity are cause for rejection only when they cover a large area, or are markedly tortuous or much dilated, or are associated with varicocele or hemorrhoids, or are accompanied with subjective symptoms. The condition is very common and in many cases causes no symptoms whatever.

Situated in the leg below the knee, and associated with varicose ulcers or scars from old ulcerations, varices of any kind are disqualifying.

Chronic and obstinate neuralgias, particularly sciatica, are causes for rejection.

Adherent or united fingers disqualify.

Permanent flexion or extension of one or more fingers, as well as irremediable loss of motion of these parts, disqualifies. Permanent partial flexion of the second and third joints of the little finger does not disqualify, provided there is mobility in the first joint.

Total loss of either thumb disqualifies.

Mutilation of either thumb to such an extent as to produce material loss of flexion or strength of the member disqualifies. The common distortion of the extremity due to contusion or felon need not disqualify.

Loss of more than one phalanx of the right index finger disqualifies.

Loss of the terminal and middle phalanges of any two fingers on the same hand disqualifies.

Entire loss of any finger, except the little finger, of either hand disqualifies.

Supernumerary digits, so situated as not to interfere with the functions of the hand or fingers, do not disqualify.

Perceptible lameness or limping is a cause for rejection.

Knock knee of moderate degree is not a cause for rejection. It is disqualifying only when the applicant is unable to take the position of a soldier, when the gait is clumsy or ungainly, or when subjective symptoms of weakness are present.

Bow legs are cause for rejection only when so excessive as to produce noticeable deformity when the applicant is dressed.

Club foot is disqualifying except in very rare cases in which the defect is so slight as to produce no symptoms.

Pes cavus (hollow foot) of moderate degree is not disqualifying.

Flat foot is a cause for rejection when accompanied with symptoms of weak foot. Simple sinking of the arch of the foot is extremely common and unless attended with subjective symptoms is of no consequence.

The strength of the foot should be tested by requiring the applicant to walk on his toes (the soles of the feet being nearly vertical with the floor) and to hop on the toes of each foot. He should be able to rise on the tip toes strongly, to hop well, and to alight on the toes after springing from the ground. Pronounced cases of flat foot, attended with marked eversion of the foot and marked bulging of the inner border due to inward rotation of the astragalus, are disqualifying regardless of the presence or absence of subjective symptoms.

Loss of the great toe or loss of any two toes on the same foot are causes for rejection.

Webbing of all the toes is a cause for rejection.

Overriding or superposition of any of the toes to such a degree as to produce subjective symptoms is a cause for rejection.

Ingrown toenails (usually of the great toe) are disqualifying unless readily amenable to treatment.

Hallux valgus is disqualifying when sufficiently marked to interfere with locomotion or when accompanied with a painful bunion.

Bunions sufficiently pronounced to interfere with function are disqualifying.

Supernumerary toes are causes for rejection when they interfere with walking or produce other subjective symptoms.

Hammer toes, when existing in a marked degree, are cause for rejection.

Corns on the sole of the foot are disqualifying when they are tender or painful.

Hyperidrosis and bromidrosis are disqualifying when present to a marked degree; but the diagnosis should be definitely established by allowing the applicant to cleanse his feet thoroughly and to put on fresh stockings and clean shoes.

Men whose feet are habitually sodden, with blistered skin, should be rejected.

288. METHODS EMPLOYED IN MAKING PHYSICAL EXAMINATIONS

As it is of the first importance that accepted recruits shall be sufficiently intelligent to perform the complex duties required of a soldier, the medical officer should bear this constantly in mind during the whole examination of every applicant for enlistment, and should use every possible means to arrive at a just estimate of the applicant's mental capacity and intellectual power. The applicant's answers to questions, his facial expression and general alertness, and the readiness with which he comprehends the directions given him for performing the prescribed exercises will all assist in arriving at a correct conclusion.

The applicant should be questioned as to his family and personal history, particularly in regard to tuberculosis, typhoid fever, epilepsy, and enuresis; with reference to injury and surgical operations; also in regard to his use of alcohol and tobacco. His answers to these and other questions may bring out defects in speech and may give clue to a lack of intelligence or mental stability.

If applicants giving a history of typhoid fever are found satisfactory in other respects, and are enlisted, examination may be made afterward, if deemed advisable, to determine whether they are bacillus carriers.

The medical examiner will use every possible diagnostic procedure at his disposal, including the use of the microscope, the X-ray, and other laboratory methods, for the determination of doubtful cases, and may admit such cases to hospital for study and observation during a reasonable period in order that a definite conclusion may be reached with regard to them. Applicants unfit for service by reason of temporary illness not of a serious nature may be admitted to hospital for treatment with a view to their enlisting upon recovery.

289. THE NECESSITY FOR ROUTINE METHOD OF PHYSICAL EXAMINATION

It is important that a routine method of examination, covering all necessary points, shall be memorized in order to insure the complete examination of every case and to prevent the occasional omission of some essential detail.

The following order will be observed in making this examination: First, test the applicant's vision; second, test his hearing; third, strip him of all clothing and inspect his general physique and appearance; fourth, take his height, weight, and chest measurements; fifth, require him to perform the exercises prescribed in these rules; sixth, make a special examination of the various parts of the body in the order and to the extent prescribed in these rules. The applicant must be entirely nude during the whole of this examination after he has been subjected to the tests of vision and hearing.

290. THE METHOD FOR DETERMINING AND RECORDING ACUITY OF VISION

The test type should be placed in a good light, about the height of the eye. If the room is not well lighted by daylight, an artificial light with a reflector should be used, as it will be more uniform.

Place the candidate or patient with back to the window or source of light, at a distance of 20 feet, or meters, from the type.

Examine each eye, covering the other eye with a card or an opaque disc in a trial frame. The hand should not be used for this purpose, as it temporarily blurs vision.

The right eye should ordinarily be examined first before the candidate becomes familiar with the types.

The candidate should be directed to read the test type from the top of the card down as far as he can see, and his acuity of vision recorded for each eye, with the distance of 20 feet as the numerator, and the proper distance of the lowest line he can read correctly as the denominator of a fraction.

If he reads the 20 feet type correctly his vision is recorded: Vision, 20/20; if he does not read below the 40 feet type: Vision, 20/40; if he reads the 15 feet type: Vision, 20/15, etc.

If he reads the 30 feet line correctly with the right eye and the 40 feet line with the left eye, his vision is recorded: Vision R. E. 20/30; L. E. 20/40.

If he reads one line correctly, as, for instance, the 30 feet line and one-half or less of the next lower, or 20 feet line, his vision is recorded: Vision, 20/30 \div .

If he reads more than one-half of one line but not all of the letters correctly, as, for instance, two-thirds of the 20 feet type, his vision is recorded: Vision, 20/20 —.

If he can not read any type at 20 feet, the distance is then reduced until he can read the 100 feet type, and the acuity of vision is recorded with the distance as the numerator and the proper distance of the type used as the denominator, as: Vision, R. E. 10/100; L. E. 5/100.

If the acuity of vision is less than 20/20 and is corrected by glasses, the acuity without glasses and with glasses is given, and the correcting formula is noted, as:

Vision, R. E. 20/40, corrected to 20/20 by — I. D. cy. 180°.

Vision, L. E. 20/100, corrected to 20/30 by —.50 D. cy. 180°—2.00 D. S.

If he can not read the type at any distance, the distance at which he can count fingers is recorded, as: Vision, R. E. can count fingers at 20 inches.

If he can not count fingers, the distance at which a light can be distinguished is recorded.

If a light can not be distinguished he is recorded as blind.

As the types are memorized easily, they should not be left where applicants can read them, and it is well in examining the left eye to direct that the lines be read from right to left and to use new type

in case of doubt, or to expose one letter at a time by means of a small opening in a card or sheet of paper.

A more correct idea may be obtained by having the candidate read from the top of the card down. Do not direct him to read the lowest line he can see, and always use a card having type from 10 feet to 200 feet.

The distance of 20 feet should not ordinarily be reduced, as a shorter distance leads to some error from the action of the accommodation and from the fact that the type may then be within the far point of moderate myopia.

291. METHOD FOR EXAMINING AND RECORDING COLOR SENSE

Color sense is the power which the retina has of perceiving color, or the sensation from the impression of different wave lengths of light.

Color blindness is the absence of the perception of one or more of the primary colors, red, green, and violet.

Complete color blindness is the absence of the perception of all color.

Partial color blindness is the absence of the perception of one or two of the fundamental colors, objects of the missing color sense being seen in shades of gray.

When one of the colors is absent there is said to be complete red, green, or violet blindness. Violet blindness is rare, the ordinary forms being red and green blindness.

The following method of Holmgren is used for the detection of color blindness and the test should be applied to all persons examined for admission to the Army and the result recorded. This consists in the power to select various colors in the form of test wools to match certain test skeins.

The set of test worsteds consists of three large skeins, (1) light pure green, (2) rose-purple, (3) red, and a considerable number of small skeins of confusion colors of various shades of the following colors, with gradations of tint from the lightest to the darkest: red, orange, yellow, yellow-green, pure green, blue-green, blue, violet, purple, pink, brown, and gray, all wrapt in a white muslin cloth.

The test is conducted as follows: The worsteds are placed in a heap on the muslin cloth in a good light, the confusion colors thoroughly mixed. A skein of the test color is taken from the heap and laid far enough away from the others not to be confounded with them. The person examined should be directed to select other skeins of the same color, without naming it, and to place them by the test skein. He should understand that he is to select skeins which make a similar impression on his chromatic sense, independently for any name he may give the color; that exact resemblance is not required, but that lighter and darker shades of the same color are desired, etc.

Test I. The large green skein is first presented. The examination should be continued until the person examined has placed near

the test skein all the confusion skeins of the same color, or until he has shown by his promptness and manner that he can easily and unerringly distinguish the confusion colors, or until he has placed by the test skein one or more skeins of some other color. If he selects only green skeins, he is not color blind. If he selects with green one or more skeins of any other color, usually gray, drab, fawn, light pink, or yellow, he is *color blind*, while if he shows a manifest tendency to do so, but does not absolutely do so, he has a *feeble color sense*.

Test II. The rose-purple test skein is presented. The examination should be continued until the candidate has placed all or nearly all the skeins of the same color near the test skein, or until he has selected several skeins of some other color.

The diagnosis may then be made by the following rules:

(a) If the first test has shown him to be color blind, but in the second test he selects only rose-purple, *i. e.*, the correct skeins, he is *incompletely color blind*.

(b) If in the second test he places with the rose-purple test skein blue or violet skeins, he is completely *red blind* and does not see the red in the test skein.

(c) If in the second test he placed with the rose-purple test skein shades of green and gray or one of them, he is *completely green blind*. The red blind never select the colors taken by the green blind and *vice versa*. The green blind will often place a blue or violet skein by the side of the green, but only the lightest shades of these colors, or may place light blue with the gray and green in the second test; but if he places gray or green shades with the rose-purple he is green blind.

Test III. The red test skein is presented. The test should be applied only to those shown to be completely color blind by the previous tests. It is not absolutely necessary, but is occasionally useful in confirming diagnosis.

The completely red blind places with the red test skein shades of red, green, and brown, which appear to the normal sense darker than the test skein.

The completely green blind places with the red test skein shades of red, green, and brown, which appear to the normal sense lighter than the test skein.

Violet blindness, which is very rare, will be recognized by a persistent confusion of purple, red, and orange in the second test.

Complete color blindness (all colors), practically unknown, should be recognized by a confusion of every shade having the same intensity.

In recording the results of the examination the terms, "color sense, normal," "color sense, feeble," "incompletely color blind," "completely red blind," "completely green blind," "completely violet blind," and "completely color blind (all colors)" will be used.

292. THE METHOD FOR DETERMINING AND RE- CORDING ACUITY OF HEARING

Although the conversational voice varies greatly in quality and intensity in different individuals, and the determination of acuity of

hearing by this method is not as accurate as by some others, it is given as the principal test, as it is the impairment of the power of hearing sounds of this kind which becomes a disability in everyday life, and which we wish to discover in our examinations.

The hearing power should be determined and recorded for each ear by the voice test as follows:

Place the person to be examined facing away from an assistant who is 20 feet distant, and direct him to repeat promptly the words spoken by the assistant.

Close one of the candidate's or patient's ears with the thumb or finger tip placed well in the ear.

The examiner should face in the same direction as the candidate, and close one of his own ears in the same way as a control.

The assistant should use a low conversational voice (not a whisper), just plainly audible to the examiner, whose hearing should be normal, and should use figures, names of places, or other words or sentences, until the condition of the candidate's hearing is evident. Two or three sentences will ordinarily be sufficient if the hearing is normal.

Combinations of figures are better than single figures, and incorrect addition, subtraction, and multiplication are better than correct combinations which afford opportunity for guessing.

The acuity of hearing is expressed in a fraction, the denominator of which is the distance in feet at which the words are heard by the normal ear, and the numerator of which is the distance at which they are heard by the candidate.

If the candidate repeats the words correctly his hearing is recorded: Hearing 20/20. If he can not hear the words at 20 feet, the assistant should approach foot by foot, using the same voice, until the candidate can repeat the words correctly. This distance will then be recorded as the numerator and 20 feet as the denominator, as: Hearing, R. E. 20/20, L. E. 10/20.

In cases of deafness of doubtful degree the whisper and a loud voice may also be used and the result recorded.

The watch test may also be used in doubtful cases. The watch is first tested by a normal ear and the greatest distance at which it can be heard is noted.

The candidate's eyes should be thoroughly covered so that he can not detect the movements of the examiner.

The watch is first held close to his ear so that he will understand what he is expected to hear, and then the greatest distance at which he can hear it is determined and recorded as the numerator and the proper distance as the denominator of the fraction.

If the watch can be heard by the normal ear at 40 inches, hearing is recorded: Hearing, watch test, R. E. 40/40, L. E. 10/40, etc. This point must be determined by several gradual movements of the watch outward and inward.

293.

GENERAL INSPECTION

The applicant while naked will be subjected to the general inspection, measurements, weighing, and exercises prescribed.

294.

Height, Weight, and Chest Measurements

Height. The applicant will be placed against the measuring board with his feet together, the weight being thrown on the heels and not on the toes nor on the outside of the feet. He must be made to stand erect without rigidity, and with the heels, calves, buttocks, and shoulders touching the board, the chin being depressed sufficiently to bring the head into a natural, upright position under the horizontal bar. The height will then be noted in inches and parts of an inch to quarters.

Weight: The applicant will be weighed.

Chest measurement: The applicant will be made to stand erect with his heels together and to raise his arms over his head. The measuring tape will be carefully adjusted around the chest with the upper edge of the tape just below the lower angles of the shoulder blades behind and the nipples in front. The arms of the applicant will then be dropped to the sides and he will be directed to take several deep breaths to verify the maximum and minimum measurements. Care must be taken not to displace the tape and to avoid muscular contortions. Many men must be taught how to breathe and to expand the chest before the measurements are taken, and consequently great care and patience are often necessary in order to get correct results. The measurements taken will be recorded, and the qualification or disqualification of the applicant in respect thereof will be determined, in accordance with the standard established by instructions issued from the War Department.

295. Exercises.

The applicant will be put through the movements described below, which bring into action the various joints and muscles of the body. This is best accomplished by requiring the applicant to follow the prescribed movements as made by a member of the recruiting party.

The elbows should be brought firmly to the sides of the body and the forearms extended to the front, palms of the hands uppermost; extend and flex each finger separately; bring the points of the thumbs to the base of the little fingers; close the hands, with the thumbs covering the fingers; extend and flex the hands on the wrists; rotate the hands so that the finger nails will first be up and then down; move the hands from side to side. Extend the arms and forearms fully to the front and rotate them at the shoulders; flex the forearms on the arms sharply, striking the shoulders with the fists. Extend the arms at right angles with the body; place the thumbs on the points of the shoulders; raise and lower the arms, bringing them sharply to the sides at each motion. Let the arms hang loosely by the sides; swing the right arm in a circle rapidly from the shoulder, first to the front and then to the rear; swing the left arm in the same manner. Extend the arms fully to the front, keeping the palms of the

hands together and the thumbs up; carry the arms quickly back as far as possible, keeping the thumbs up, and at the same time raise the body on the toes. Extend the arms above the head, locking the thumbs, and bend over to touch the ground with the hands, keeping the knees straight.

Extend one leg, lifting the heel from the floor, and move all the toes freely; move the foot up and down and from side to side, bending the ankle joint, the knee being kept rigid; bend the knee freely; kick forcibly backward and forward; throw the leg out to the side as far as possible, keeping the body squarely to the front; repeat all these movements with the other foot and leg; strike the breast first with one knee and then with the other; stand upon the toes of both feet; squat sharply several times; kneel upon both knees at the same time (if the man comes down on one knee after the other there is reason to suspect infirmity).

Take the position to "fire kneeling," stand erect, present the back to the examiner, and then hold up to view the sole of each foot; leap directly up, striking the buttocks with both heels at the same time; hop the length of the room on the ball of first one foot and then the other; make a standing jump as far as possible and repeat it several times; run the length of the room in double time several times.

While the exercises hereinbefore prescribed may cause breathlessness and accelerated throbbing of the blood vessels, they should not cause manifest exhaustion or great distress in a healthy man. Lack of ability to perform any of these exercises indicates some defect or deformity that should be investigated further.

296. Cross examination of special parts.

Examine the skin for evidences of disease, ulcers and eruptions, extensive, deep, and adherent scars, extensive or disfiguring birthmarks, hypodermic scars indicating a drug habit, for vermin, and for obscene tattooing.

Examine the scalp for vermin and the bones of the head for abnormalities in size and shape, running the fingers over the head to search for depressed fractures and evidences of trephining. Question the applicant for any history of fits (epilepsy).

Examine the eyes for chronic inflammations, triangular or fan-shaped growths on eyeball with the apex encroaching upon the cornea (extensive pterygium), marked squint, and drooping of the upper lid.

Examine the ears for disfiguring malformations and any discharge from the canal.

Examine the nose for dilated vessels indicative of alcoholism, for disfiguring deformities, for offensive discharges, and for inability to breathe freely through the nose and with the mouth closed.

Examine the face and mouth for any unsightly deformities, for loss of teeth, for fissure of the upper lip or palate, for perforations and extensive ulceration of the palate and tongue (syphilis), and for inability to pucker the mouth in whistling, indicating facial paralysis.

Examine the neck for wry neck, goitre, enlarged or suppurating glands and their resulting scars.

Examine the chest for malformations. It should not be flat, shrunk in any locality, nor "chicken breasted." The chest measurements and mobility should be ample.

Examine the abdomen for obesity, dropsy, undescended testicle and ruptures, and question for any history of chronic dyspepsia or dysentery.

To detect a rupture, direct the applicant to stand with his feet apart and his arms raised above his head and instruct him to cough, the examiner placing the tip of his forefinger at the point of the suspected rupture; the existence of a hernia is manifested by a protruding bunch at the point of rupture, and by the distinct shock or impulse imparted to the finger of the examiner. The most common locations for hernia are the groins, the navel, and old scars of abdominal operations.

Examine the back for deformities and malformations; direct the applicant to bend forward from the hips and to draw apart the buttocks with both hands; inspect the anal region for hemorrhoids, prolapse of the rectum, and fistula.

Examine the groins for enlarged glands or buboes; inspect the hairy region for lice; examine the penis for phimosis (inability to retract the foreskin over the head of the penis) and for other malformations; having required the applicant to pull back the foreskin and to strip the penis forward, examine for ulcerations and for gonorrhoea. Examine the scrotum for absence of the testicles, for chronic enlargements, for accumulations of fluid, and for excessive varicocele. Question the applicant regarding incontinence of urine.

Examine the hands and arms for deformities, old fractures, and dislocations, amputation of fingers, and partially flexed or stiff joints.

Having directed the applicant to stand erect, inspect the legs anteriorly and posteriorly for varicose veins and for knock knees and bow legs. Varicosities may be more readily detected by having the applicant stand on his toes with the legs well separated. Examine the feet for flat foot, corns, deformed toes, ingrown toe nails, and bunions, and for stinking feet. Care should be taken to examine the soles of the feet for corns.

Direct the applicant to stand with the inner borders of his feet together, arms horizontal, fingers apart, and eyes shut; inspect for tremors and instability indicating alcoholism or nervous disorders.

The heart will be examined by auscultation (by percussion and palpation if necessary) and the apex beat located; doubtful cases will be further examined in the dorsal position. The heart should also be examined after moderate exercise such as hopping a short distance on one foot. The conditions of the arteries will be investigated with reference to aneurism and arteriosclerosis.

Careful distinction should be made between organic murmurs and those of functional origin; the former may be overlooked occasionally even by an expert clinician, but it is far more frequent for the medical examiner to report an organic murmur when nothing more exists than a temporary functional murmur or harsh heart sound. Ordinarily

no murmur should be declared organic unless secondary physical signs can be demonstrated. Posture is an important consideration, and all doubtful cases should be examined in the recumbent position as well as standing or sitting. The effect of stethoscopic pressure is most important, increasing certain murmurs and diminishing or obliterating others.

The lungs will be examined both anteriorly and posteriorly by inspection, palpation, percussion, and auscultation.

The applicant having been directed to bend forward and to separate the buttocks, the anal region will be inspected for hemorrhoids, fistula, mucous patches, and other defects.

The applicant standing erect, the legs will be inspected for varicose veins. The back will be examined for spinal curvature and other abnormalities.

The applicant will be directed to raise each foot in succession behind him, presenting the sole for inspection for corns or flat foot.

The applicant having been directed to face the examiner, the feet will be again inspected for flat foot, corns, ingrown toe nails, bunions, deformed or missing toes, hyperidrosis and bromidrosis; the knees for genu varum and valgum. Cases showing flat foot should be particularly examined to determine the strength of the foot.

Both sides of the scrotum will be palpated for changes in the testicles, epididymis, and contents of the tunica vaginalis, and for varicocele.

The genitals will be inspected for any evidence of venereal disease and for malformations, the glans penis and corona being exposed and the penis stripped; the pubic region is to be inspected for pediculi.

Examination is to be made by inspection and palpation for femoral, inguinal, ventral, and umbilical hernia.

The inguinal glands will be palpated, also the epitrochlear and cervical glands, and the applicant will be questioned as to syphilis.

The applicant being directed to stand with the inner borders of the feet together, arms horizontal, fingers apart, and eyes closed, he will be examined for tremors and nervous instability.

The hands and arms are to be inspected for deformities, old fractures and dislocations, amputations of fingers, partially flexed or ankylosed joints, and for impaired functions.

The neck is to be inspected for goitre and other defects.

The applicant being directed to open his mouth, the teeth will be examined, the palate will be inspected for fissures and perforation, and the mucous membrane for mucous patches and scars of former ulcerations.

The face will be examined for harelip or other repulsive deformities or stigmata, for facial paralysis, and for other evidences of disease.

The nose will be inspected for deformity and for dilated vessels indicative of alcoholism.

Each external ear and mastoid region will be inspected.

Each eye will be inspected for evidence of muscular or other defect and for disease, the lids being everted and examined for trachoma.

The scalp will be inspected for pediculi and disease and the cranium palpated for evidence of former injury, depression from fracture or trephining, and for stigmata of degeneracy.

The skin will be inspected for anaemia, jaundice, eruptions, and other symptoms of disease, for hypodermic and other scars, and pediculi, also for evidence of successful vaccination.

The condition of the abdominal organs will be investigated.

The applicant will be taken into the dark room, where examination will be made of the anterior and posterior nares, the pharynx and the tympanic membranes. A laryngeal examination should be made in doubtful cases.

As each region or organ is examined appropriate questions should be asked to elicit the history of any injury or disease of that part.

297. PHYSICAL REQUIREMENTS FOR AVIATORS

Special Regulations for examination of aviators are published by the War Department and furnished to officers detailed to make the examinations.

298. PHYSICAL REQUIREMENTS FOR NATIONAL ARMY

Special Regulations, published by the War Department, are furnished to examining boards.

They conform to the standards published herein.

299. PHYSICAL QUALIFICATIONS FOR APPLICANTS FOR COMMISSIONS AS SECOND LIEUTENANT OF THE LINE

Physical standards are same as for recruits, except that vision less than 20/40 in either eye and color blindness for red, green, or violet are causes for rejection. The physical examination will be made complete and thorough in every case and all variations from the normal will be recorded.

Physical defects of a temporary character which can be removed by the time of the final examination will not disqualify but will be recorded.

In case of rejection the disabilities preventing acceptance must be conclusive of the reasonableness and propriety of the rejection, and must be fully recorded. In doubtful cases the board may require additional testimony of previous physical status from others competent to furnish it.

300. PHYSICAL QUALIFICATIONS FOR APPLICANTS FOR THE MEDICAL CORPS

The same as for recruits except ocular requirements, which are as follows:

(a) The visual acuity of each eye without lenses must not fall below 20/100 as determined by the official test types.

(b) With the proper correction of lenses, the visual acuity of each eye must not fall below 20/20. In cases where the acuity of vision without glasses is markedly below normal, the presence of organic disease must be excluded.

(c) While using the refractive correction required for distant vision, in the case of ametropic conditions, the applicant must be able to read No. 1 gauge (.50 D. Snellen) at the usual distance for near work (13-20 inches) while using both eyes.

(d) Strabismus for any type or color blindness for red, green, or violet will be a cause for rejection.

(e) The foregoing requirements apply to eyes free from disease, either acute or chronic. All lesions of either fundus oculi, whether old or of recent origin, as determined by ophthalmoscopic examination, will be cause for rejection. A certificate from a competent oculist may be accepted at the option of the examining board as evidence of freedom from lesions of the fundus.

301. THE ANNUAL PHYSICAL EXAMINATION OF OFFICERS

This is required by G. O. 148, 1910, in Compilation of Orders, (par. 22). It will be conducted by two officers of the Medical Corps who will be guided by the instructions on the blank forms: 377 A. G. O. for field officers, 378 A. G. O. for officers below the grade of major.

302. PHYSICAL EXAMINATION OF OFFICERS FOR PROMOTION

This is a part of their general examination, and is governed by paragraphs 2 to 34 inclusive, G. O. 14, 1912, in Compilation of Orders, par. 8.

303. PHYSICAL EXAMINATION OF OFFICERS FOR RETIREMENT

This follows same standards approximately as examinations for promotion.

304. PHYSICAL EXAMINATION OF OFFICERS APPLYING FOR LEAVE OF ABSENCE

The commanding officer will refer applications for leaves of absence on account of sickness to the surgeon. The surgeon will examine the applicant, and should he find the leave necessary to restore health he will submit to the commanding officer a medical certificate on form 438 A. G. O., which prescribes the scope of the examination.

305. BIMONTHLY PHYSICAL EXAMINATION OF ENLISTED MEN

This is required by paragraph 2, Compilation of Orders. The examination comprehends:

Examination of feet, foot wear,
 Examination for personal cleanliness,
 Examination for detection of venereal or other contagious disease.

Defects and disabilities to be reported to the company commander for record. Disciplinary measures where called for. Treatment to be instituted by the medical officer.

306. The physical examination of apprehended and surrendered deserters is governed by Army Regulations. The form of certificate required is given in the Manual for Courts-Martial.

307. Physical examination of recruits joining organization. (A. R. 870.)

Made by medical officer as soon as practicable to determine:

- (1) Protection against smallpox.
- (2) Completion of typhoid prophylaxis.
- (3) Completion of paratyphoid prophylaxis.
- (4) Disabilities if any with opinion as to whether this existed prior to enlistment.

308. Disabilities discovered during physical examination of troops.

When disabilities are discovered soon after enlistment they are noted on the service record of the man, if likely to produce symptoms affecting his fitness for service later on and if causing a disability or tending to affect future health or health of the command the patient is treated to effect a cure which if unsuccessful is followed by a certificate of disability and recommendation for discharge.

309. Other Physical Examinations.

(a) *For admission to the following hospitals, see Army Regulations.*

- { Government Hospital for the Insane.
- { Army and Navy General Hospital at Hot Springs, Ark.
- { General Hospital at Fort Bayard, N. Mex.

(b) *For candidates for appointment in State Department.* Medical officers on duty as attending surgeons of posts will make physical examinations, at their respective posts, of such candidates for foreign service appointments, under the Department of State as may report to them for such examination under proper authorization from that Department. (G. O. 64, 1910)

(c) *For Mounted Service School, see G. O. 59, 1913.*

(d) *Examination of post noncommissioned staff officers, see, G. O. 43, 1909.*

(e) *Examinations of candidates for foreign service, see, G. O. 64, 1910.*

Physical defects to be reported in detail, see, G. O. 104, 1903.

The Physical Examination of enlisted men for discharge on account of disability is subject to the provisions of Army Regulations, and of instructions issued from time to time in general orders.

310. Physical requirements for National Army. See special regulations of the President issued to examining boards.

(a) *Minimum visual requirements.* 20/100 for the poorer eye, 20/40 for the better provided no organic disease exists in either eye.

(b) *Minimum dental requirements.* At least 4 serviceable molar teeth, two above and two below on one side and two above and two below on the other side so opposed as to serve for mastication. A well fitting bridge or plate where not more than half of the teeth are involved, is not disqualifying.

(c) *Genito-urinary.* Gonorrhoea does not disqualify. Candidate with this disease must be advised to seek treatment before reporting for duty.

CHAPTER VII

MILITARY HYGIENE

311. Military hygiene defined. Military hygiene is the science of the care of troops, and deals with the laws of health, the causes of disabilities, and the methods preventing them, to the end that the fighting forces shall suffer no depletion in strength from avoidable diseases. It is a part of the service of security and information.

312. The causes of disabilities among troops. *There are two classes of disabilities, the infectious and the non-infectious.*

I. NON-INFECTIOUS DISABILITIES

313. Non-transmissible disabilities. These do not occasion much of an increase in the sick rate, though they act as predisposing causes to the infectious classes. Thus we find that immaturity is in itself a predisposing cause, inasmuch as it cannot meet the demands required of the mature soldier; so also the ageing adult begins to fail in responding to military requirements. The period between 21 and 35 years of age furnishes the most desirable material for military service; men who are adaptable physically and mentally. With such men we expect to get the optimum results of hygiene. We base our regulations upon the average mature soldier and with him the three main causes of non-infectious disease are:

- (1) Neglect of the laws of hygiene.
- (2) Ingestion of poisons.
- (3) Traumatism.

314. The eight laws of hygiene. The laws of hygiene may be epitomized in the following eight rules.

1. Keep the skin clean.
2. Keep the body properly protected against the weather.
3. Keep the body properly fed.
4. Keep the body supplied with fresh air.
5. Keep the body well exercised without exhaustion.
6. Keep the body rested.
7. Keep the body free of wastes.
8. Keep the mind busy and happy.

315. Obedience to the rules of hygiene. This is obtained by knowledge and discipline. Knowledge comes from instructions by the medical officers; discipline is the result of training for which the company commander is held mostly responsible.

An excessive sick report and lack of discipline go hand in hand.

316. Supervision of the hygiene of troops. Army Regulations state that the surgeon of every post or command, under the direction of the commanding officer, will supervise its hygiene and recommend such measures as he may deem necessary to prevent or diminish disease.

317. Instruction of line officers in hygiene. Line officers are required to have a knowledge of hygiene and this subject is taught in the garrison schools. (The present authorized textbook on military hygiene is by Lt. Col. Ashburn, M. C., U. S. A.)

318. Instruction of enlisted men in hygiene. All enlisted men are instructed in hygiene by medical officers serving with them. The following is presented as an outline for such instruction:

Rule 1. Keep the skin clean. A dirty body invites sickness.

Small troubles such as chafing, sore feet, saddle boils, sore eyes, felons, whitlows, earache, toothache, carbuncles, fleas, lice and ringworms, are all caused by lack of cleanliness, and they put men on sick report.

(a) Owing to excessive perspiration a daily bath with soap is desirable in summer; and in the tropics, the year around. At least a weekly bath should be taken when possible. When not possible to bathe, take a good rub daily with a dry towel.

(b) Keep your feet clean with soap and water and put on dry socks before sleeping at night. Soiled socks should be washed and hung up to dry over night. Blisters should be opened with a needle or clean pin, and plenty of foot powder put in the socks. Get it from your squad leader.

(c) Keep your finger nails trimmed short with scissors or knife. Never bite them off. Keep them cleaned and keep your hands washed, especially at meal times.

(d) Underwear must be washed in clean water, hot when possible and when soiled change as soon as possible.

(e) Do not bathe, and do not wash your clothes in dirty water. Bathing in water containing much alkali (hard water) or fine sand or mud will make the skin smart and chafe and cause sore eyes.

(f) The hair of the head should be kept well-trimmed.

Rule 2. Keep the body properly protected from the weather. Clothing of the soldier is worn as a protection. Too much causes sweating and exhaustion on the march and too little causes chills and frost bite.

It should always be loose, not only because tight clothing interferes with the free and easy movement of the body, but especially because it slows the flow of the blood to the hands, feet and head, where it is most needed.

(a) Do not rest in wet clothing nor let it dry on the body, if possible to change.

(b) When resting after exercise or while doing guard at night, more clothing should always be put on.

(c) When sleeping, especially in the tropics or hot weather, the belly must be protected from chilling by a flannel bandage or the shirt tucked into the drawers, or a pillow laid across.

(d) Never sleep in a draft without covering.

(e) It is wise to tie a handkerchief over the head and ears at night to prevent sore throat and earache.

(f) Never sleep on the bare ground when you can sleep on branches, hay, or anything else.

(g) When possible, in bivouac pick a dry place on high ground in the shelter of a hill or woods on which to lie down.

(h) In the heat of the summer and in the tropics keep out of the sunshine as much as possible, and when in it always wear your hat.

When bathing in the sun in summer or in the tropics always wear long sleeved shirts and drawers to prevent sunburn, which sometimes will cause dreadful blisters.

(i) In winter time never ride when you can walk. Many have lost their feet from frost bite by riding in wagons instead of walking.

When it is very cold pull woolen socks over the shoes and then put on snow excluders or arctics, and at night wrap the feet in clothing, grass or straw to prevent freezing while asleep.

Be careful to rebutton the clothing in winter time after attending to Nature's calls. Cold fingers may make you careless, but the cold is merciless and may cause a bad frost bite.

The first feeling of frost bite is a numbness and the first sign is a marble whiteness. Frost attacks first the nose, ears, cheeks, fingers; and toes.

(j) Sun glare and snow blindness may be prevented by colored goggles or a handkerchief tied across the face with a small slit for the eyes or by greasing the face and eyelids and rubbing in charcoal around the eyes.

Rule 3. Keep the body properly fed. Your company mess is sufficient for your needs and is wholesome, provided it is well chewed. Large lumps of food take a longer time to digest than small particles do, and so they tire the stomach and also cause constipation, gas, and indigestion with headache.

Do not eat food left behind in strange houses or by the enemy, nor food that smells or looks badly.

If haversack rations are issued to you, do not eat them all at the first meal, but make a division for each meal. Stuffing will make you sick on a hike and later, hunger will drive you to eat things you would not touch at other times.

Before starting on the day's hike drink all the water you can and fill your canteen with water only.

Be sure your canteen does not leak.

After starting, do not drink anything until the end of the hike.

Do not eat ice or snow to quench thirst. It will make you more thirsty. Do not drink large quantities of cold spring water when heated,—it will give you a very bad bellyache.

Do not drink whiskey or beer, especially in the field. It will weaken you and favor heat exhaustion, sunstroke, frost bite and other serious troubles.

Alcohol muddles the mind and clouds thoughts, and so causes a feeling of carelessness and silliness that may ruin some military plan,

or give the whole thing away to the enemy and with it the lives of yourself and your comrades.

The soldier who drinks alcohol will be among the first to fall out exhausted.

If you use tobacco, do not chew or smoke while marching. Tobacco is only a dope and increases the work of the heart.

The best stimulant for a soldier is a cup of hot coffee. (Note. The medical officer keeps watch of the diet of the command. Pellagra, beriberi, and scurvy are diseases of malnutrition, each due to lack of one of the essentials of varieties of foods.)

Rule 4. Keep the body supplied with fresh air. The brain and other internal organs require oxygen (a part of the air) continually, and if deprived of it for five minutes, the body will die. Therefore, it is easy to see that we must continually get plenty of fresh air into the lungs to supply the blood which carries the oxygen throughout the body. In winter time, when steam-heated barracks are filled with sleeping men, it is, as a rule, difficult to get all the fresh air we need. The air in a dormitory should smell sweet and clean, even though warm. Fresh air should be continually admitted in a way that will not throw a draft on any of the sleepers. Even the air in a pyramidal tent can become dangerously fouled if overcrowded with sleepers, the

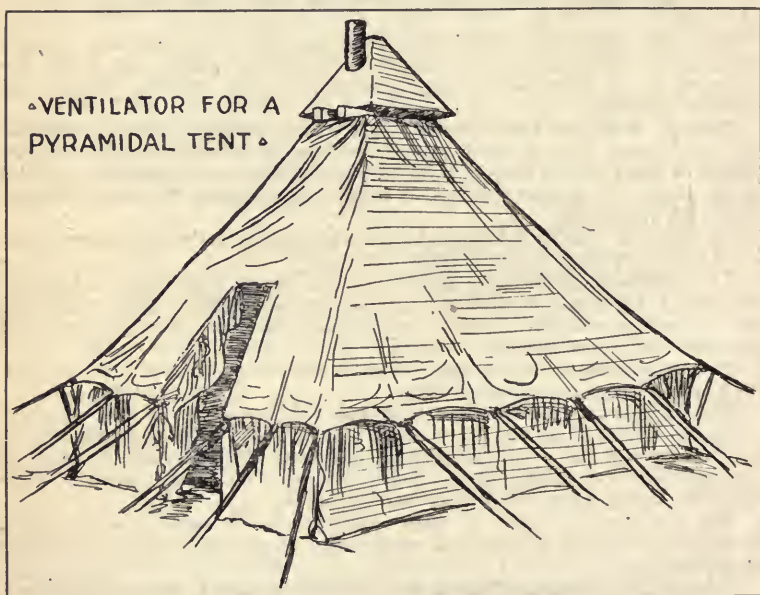


FIG. I
[150]

tent sides tightly closed, and the hood down. The hood should always be raised, for ventilation at night, and the tent walls raised during clear days.

It is much better to sleep in a cold room with fresh air than in a hot stuffy one.

Fresh air not only prevents consumption, but it will cure mild cases of consumption without other medicines.

Rule 5. Keep the body well exercised without exhaustion. Exercise is absolutely necessary to good health. Lack of exercise of any set of muscles will cause them to grow flabby and weak. Outdoor sports are the best form of exercise, because they use all the body muscles, and are in the open clear air.

Exhaustion, on the other hand, not only weakens the muscles of the body, but it also lessens the vital forces and powers to resist germs by clogging the blood with waste poisons.

Exercise is not done at the discretion of the soldier when in the field. Nevertheless, in periods between military engagements or maneuvers exercises in games and sports keep a man fit and are a pleasure.

Rule 6. Keep the body rested. Rest and sleep are most important for a soldier in campaign.

Give the body enough sleep. Do not join idle parties going to walk the streets of the nearest town at nights, nor sit up late playing cards, nor wander in native towns after dark. Eight hours of uninterrupted sleep are enough for the average man, and you should always have that much in every twenty-four hours. Remember your comrades need it also; so, if you come in after taps, do not make a racket with slamming doors, heavy tramping, talking or whistling. And in camp be careful not to fall over tent ropes or step on other sleepers. Do not drink coffee at night,—it will keep you awake and rob your body of needed rest.

Halts. When on the march take advantage of every halt to rest your body. As soon as the command is given to fall out, select, if possible, a good dry place on the side of the road to sit or lie on. If carrying the pack, loosen it and rest back on it, in a sitting or lying position. If the march has been a long one, lie flat on your back and raise the feet in the air. This is a quick way to remove the heavy dragged feeling of the feet and legs and to rest the heart, because the blood runs out of the legs into the body.

Straggling. One of the most exhausting things a soldier can do is to lag behind his company on a march, for the time spent by the others resting during the halts, he has to spend in double timing to catch up. If you must leave the column do so during a halt.

Rule 7. Keep the body free of wastes. The waste materials from the body leave it as solids from the bowel, liquids from the skin and kidneys, and vapor from the lungs.

Retention of wastes. When wastes are retained, then we have poisoning of the body. Constipation causes headache, nausea, loss of appetite, indigestion, and finally loss of strength, both physical and mental. When the kidneys do not work the patient dies within a

very few days. When the skin refuses to perspire then severe illness occurs.

Prevention of constipation. Form the habit of moving the bowels at a certain hour each day. Immediately after breakfast is a good time. This is a habit that can be cultivated just like any other habit. Cultivate it. It will do much to keep you in good health.

Always empty the bowels and bladder, especially the bowels, whenever you have the least desire to do so. Do not allow a little personal inconvenience or laziness to prevent you from doing this. The wastes from the bowels and bladder, especially the bowels, are poisons that should always be expelled from the body just as soon as possible.

Water as a laxative. Drink a big glass of water, either hot or cold, every morning before breakfast or just after reveille. It will help to loosen the bowels.

Exercise and food as laxatives. Proper physical exercise and eating ripe or cooked fruits, also chewing all food well, will also do much to keep the bowels open.

Massage as a laxative. Pressing and rubbing downward with the left hand on the lower left side of the belly will do much to induce a movement of the bowels.

Drugs as laxatives. Do not get into the habit of using laxatives to keep the bowels open. Their continued use is injurious. Use the natural means suggested above.

Causes of constipation. Most constipation comes from swallowing food in large chunks, drinking large quantities of cold liquids with the meals, and eating heavy articles of diet, such as beans, fried pork, hot bread.

Bright's Disease. The constant moderate use of alcohol combined with overeating, injures the kidneys and when they become too weak to work and throw off the waste, a deadly disease, called "Bright's Disease," results.

The free drinking of water flushes the bladder and kidneys; this, together with moderate eating, total abstinence as to alcohol, and chewing food well, prevents Bright's Disease.

Rule 8. Keep the mind busy and happy. The amusements of the post, fort, or camp should be patronized. Visit the company recreation room and library, the post library, post exchange, movies and the gymnasium, and indulge in baseball, bowling, etc., also in swimming when possible.

When tired of these amusements and recreation, apply yourself to some line of study. The post school is for that purpose. The chaplain and your company commander may start you upon a career that may become of great advantage to you in the service and after you leave it.

And don't forget to write home. Your letters will give you satisfaction, in writing them, and will afford pleasure to your people, and the replies will keep you in touch with home, the source of the best associations of life.

Never loaf, keep busy and you will keep happy and out of sickness and trouble.

319. Poisoning. Poisoning in the military service may come from habit-forming drugs, or rapid poisons, taken by mistake or with suicidal purpose, or from venomous reptiles, insects, and plants.

320. Drug habits. Unfortunately morphine, cocaine, veronal, heroin, chloral, chloroform, are sold clandestinely in all large cities, and especially in the restricted districts. Not only are they sold, but soldiers are induced to try them or have them put in their drinks by those already addicted.

321. Tobacco. It increases the work of the heart by raising the blood pressure, and also takes away the sense of hunger or appetite, thereby lessening the nourishment taken. Constant use may also cause blindness (tobacco amblyopia).

322. Alcohol. Everyone is familiar with the narcotic effects of alcohol. In the military service it leads straight to the brothel and venereal disabilities, to muscular exhaustion, to heat exhaustion and sunstroke on the march, to frost bite and exposure in cold climates, and to accidents, and because it renders the mind incoördinate and the actions silly, the victim may embarrass military plans and endanger the lives of himself and comrades.

323. Patent medicines. Although soldiers get their medical attendance and prescriptions free, nevertheless the more ignorant are sometimes beguiled into buying patent medicines and finding many of them to give transient pleasure, they continue to buy and become medicine tipplers. In this way, alcohol and other drug habits are often formed.

324. Prevention of drug habits. Lectures, discipline and the exercise of vigilance to bring culprits to justice and punish victims are the only means at hand. As the habitué usually induces others to join his miserable state everyone who is discovered should be discharged under the provisions of paragraph 148½, Army Regulations. The use of alcohol as a beverage is prohibited in military reservations or camps.

All poisons and habit-forming drugs in army hospitals must be kept under lock and key; prescriptions for them are kept in a special prescription book and issues are audited at the end of every month by a medical officer. See par. 240-241, Manual of the Medical Department.

325. Precautions in prescribing. Prescriptions are compounded by a reliable pharmacist; all poisons are prescribed to be taken in small safe doses, and never should be dispensed in large amounts to soldiers. It is better to prescribe small amounts and have them refilled oftener. Bichloride of mercury, phenol, acetanilid, acetphenetidin, and veronal should not be given out except in individual dosage. They should never be taken to be put on a shelf with other medicines for which they may be mistaken.

326. Plant and animal poisons. Snake bites, scorpion stings, bee and wasp stings, and bites, and rhus poisoning are most apt to occur in making camp or while resting during halts. Camp sites should be on high, sloping ground. Brush, high grass, rotten logs and boulders should be cleared with great caution, using poles rather than the hands. Ants may be killed by pouring carbon bisulphide into the nests and firing them.

327. Ptomaine poisoning. It is caused by eating food left over in cans from previous meals, especially hashes of meat which has been spoiled or which came from sick cattle.

328. Disabilities due to traumatism.

(a) Trivial. Such trivial traumatism as chafing, corns, bunions, blistered feet, ingrown toe nails are due to lack of personal care on the part of the soldier and oversight by his company commander. The care of the feet is a duty devolving upon company commanders. (See par. 92, Compilation of W. D. Orders.)

(b) Severe. Drunkenness, brawls, practical jokes, learning mounted drill, carelessness with weapons, vigorous games or sports, and acute insanity, are causes of accidents. In these cases the recruit is the greatest offender. He views the military life as a novelty far removed from the habits and restraints of daily life which he has left.

329. The Psycopath. The medical officer must ever be on the alert to detect the mentally disordered (usually a moron or a case of dementia praecox), which should be at once put under surveillance and promptly discharged either on Surgeon's Certificate of Disability or under the Provisions of par. 148½, Army Regulations. The psycopath unsuspected by the enlisting officer, develops his peculiar traits as soon as the pressure of discipline crosses with his own wayward desires. His name becomes almost a fixture on the sick report, in trying to get out of doing his duty. Sometimes before the case is recognized, he deserts, or murders, or commits suicide.

330. Nostalgia. Profound homesickness, especially among the young recruits, sometimes simulates the graver melancholia, and if unrecognized, may lead to desertion or suicide. The best treatment is a furlough, and in the lighter cases some cheerful ideas instilled by the surgeon, the company commander, and the chaplain. The loneliness of the recruit is a military problem.

331. Epilepsy. These cases sometimes get by the recruiting officer, and some may never have a frank convulsion, but may show alteration of character and habits, even acute insanity, as the only evidence of the nervous storm.

II. INFECTIOUS DISABILITIES

332. Transmissible disabilities. These are all dependent upon parasitic organisms, and have representatives among the bacteria, protozoa, fungi, nematodes, cestodes, trematodes, arachnids, and muscidae.

333. Importance of infections. These diseases are the ones which, by causing epidemics, play a most important part in warfare. History is replete with instances where large bodies of troops have melted away and campaigns have been abandoned because of a high morbidity and mortality from epidemic diseases.

334. Method of prevention. The prevention of this class of disabilities depends upon a knowledge of the biologic characteristics of the parasite in question, and the employment of means to destroy the

parasite, or avoid it. This is brought about by instruction and regulation. The degree of success depends ultimately on discipline, which is necessary for the successful accomplishment of hygienic regulations, to wit: personal hygiene, quarantine methods, and employment of measures of medication, fumigation, sterilization, etc., to destroy infectious foci.

335. Methods of infection. These are best classified for our purposes into groups according to the locality of the body wherein the parasite gains entrance.

- (a) The respiratory tract.
- (b) The digestive tract.
- (c) The skin and mucous membranes.
- (d) The blood and lymph.
- (e) Prenatal infection.

336. Respiratory tract infections.

The diseases due to infection through the respiratory tract are:

Bronchitis	Consumption	Coryza (rhinitis)	Diphtheria
Influenza	Laryngitis	Measles	Meningitis
Mumps	Otitis media	Pneumonia	Pertussis
Scarlatina	Tonsillitis		
	(Quinzy)		

337. Occurrence of respiratory tract infections. These infections occur most frequently among recruits because many young non-immunes from country districts are gathered into a most intimate daily life with carriers, or others in the incubating or convalescent stage of some infection, at the recruit depots or camps.

338. The method of respiratory infection. Respiratory tract infection occurs in two ways, air borne, or by contact.

339. Sources of respiratory infection. The sources of these infection are the recruit, visitors to camp and the population of adjoining towns.

340. Prevention of respiratory infection.

(a) *Recruits.* Our first source of infection is the recruit. Knowledge of the expected arrival of recruits should be utilized by preparing an isolation camp for their reception. On their arrival they are inspected outside the camp or barracks to discover possible cases of infectious diseases, and to learn whether any sickness occurred on the journey (especially important if they came by transport). All sick recruits are at once put into an isolation ward of the hospital. The remainder are placed in isolation camp for a period which will terminate at least fourteen days since leaving the recruit depot, or since the last case developed among them. Daily physical inspections are made by medical officers during isolation and all persons detailed to conduct the camp, sergeants, corporals and cooks, etc., will observe the same rules of isolation as the recruits.

(b) *Visitors to large camps of training and mobilization* are always a dangerous source of infection, not alone the idle curious, but more especially the crowds of relatives with children who may be carriers.

(c) *Sporadic cases occurring in a camp or garrison* require the isolation of the immediately affected organizations and the patient, as in the case of recruits. To this end a report at the time of the first case and daily thereafter during the course of the epidemic must be made to the chief surgeon and if near a town to the local board of health.

(d) *Special methods of prevention* consist in (1) the immunization of contacts with a serum (antidiphtheria or meningitis) (2) proper ventilation, with reduction of crowding of tents, cantonments or dug-outs and (3) in all cases of possible or actual infections, bombard the enemy in his trenches with gargles, sprays and local applications.

(e) *Early diagnosis. This is important. Failing to do so may be the medical officer's fault. Bear in mind every epidemic has a first case. When therefore a soldier comes to you with a cold in the head, or coughing or sneezing or a sore throat, don't treat his complaint as trivial and dismiss him with a gargle, but treat the cause of his complaint with all the seriousness a first case of an epidemic would deserve and so avoid the epidemic.*

341. Suggested outline of what to tell the troops about respiratory infections.

The germs that cause these diseases grow well in the dark, warm, moist lining of the nose, throat, windpipe and lungs, and they are coughed or sneezed out or blown out and float in tiny bubbles in the air or fall to dry into dust which is blown about with the wind, and so are breathed in, or they may be transferred directly by kissing invalids and sick children.

Do not visit sick people or a house where the children are sick.

Do not let other people cough or sneeze over your food or in your face.

Do not allow others to spit on the floor of your squadroom or tent.

Do not do these things yourself.

Blow your nose into a handkerchief that can be boiled or into a piece of paper that can be burned.

Put your hand before your face when you cough or sneeze.

A man with a cough or sneezing should be sent at once to see a medical officer. Put him on sick report. He is dangerous to the rest of the company.

Rinse out the nose with hot, weak salt water at night and especially after a dusty hike.

Brush the teeth after each meal and before going to bed.

Do not pick the nose with the finger nails; it makes sore spots in which germs grow.

On dusty hikes tie a handkerchief across the nose and mouth.

Never sweep the floor with a dry broom. Use a damp mop and so pick the germs up and carry them out instead of driving them up in the air as dust.

When persons have come in contact with diphtheria patients we prevent the disease by injecting an antidote to the poison (toxin) of the diphtheria germ, which we call Antitoxin.

DIGESTIVE TRACT INFECTIONS

342. The diseases due to infection by swallowing are:

Cholera, Asiatic.
 Cholera, infantum, summer complaint.
 Dysentery (amoebic and bacillary).
 Diarrheas and colitis, characterized by colic, bloody stools, and tenesmus.
 Malta Fever.
 Paratyphoid (A and B)
 Psittacosis.
 Sprue—(psilosis.)
 Typhoid.
 Tuberculosis of bones, glands and brain.
 Worms—namatodes, cestodes, trematodes.

343. The method of digestive tract infection. The parasites of these diseases live in the bowels and pass out of the body in the bowel movements and so get into rivers, streams, and underground water courses from where they may enter the water mains of cities and towns, or into wells, and so find their way into the mouth of another individual through the medium of water, milk, and food. The most common mode of infection is by *contact, direct and indirect*, with the infected individual (carrier) or animal, and is the rule in military bodies because of intimate association of military life.

Indirect contact infection results from clothing, bedding, drinking cups, food, dishes, etc., which may serve to carry the infection from one person to another, or by means of flies.

344. Several methods of prevention of digestive tract infection.

(i) *Only sterilized water is used.* Precaution must be taken to prevent contamination of the camp water supply by keeping all containers scrupulously clean and protected from dust and other sources of infection.

A. Chemical sterilization of water.

(a) An appliance carried on the supply table as "*Water Bag, Field, Sterilizing*," consists of a canvas bag of specially woven flax, 20 inches in diameter and 28 inches in length, sewed to a flat galvanized iron ring, hinged so it folds at one diameter. Spliced at four equidistant points on the ring are two crossed pieces of hemp rope, enabling the bag to be suspended on any convenient support capable of holding the weight of the bag when filled with water, which is about 330 pounds. Five nickel, spring faucets are placed at equal spaces about the bottom edge of the bag. The neck of these faucets is small enough to enter a canteen, which can be filled in 10 seconds. The self-closing faucets prevent wastage. The Water Bag is supplied by the Quartermaster Corps.

(b) *The purpose of the bag* is not for transporting water, but to provide a stationary receptacle in which water can be held long enough to sterilize and then distribute it. The empty bag weighs from 7 to 7½ pounds and folds into a convenient package for carriage in the field.

(c) *The water is sterilized* by the addition of a small amount of hypochlorite of calcium. This is carried in measured doses, sealed in glass tubes. A package of 60 of these tubes weighs 10 ounces and measures 7½ by 3½ by 4½ inches. Packed in corrugated paper it will stand rough usage. It is supplied by the Quartermaster Corps.

The tubes themselves are 3 inches in length by three-fifths of an inch in diameter and are marked with a file, enabling them to be easily broken in the fingers without fragments. They contain from 14 to 15 grains of calcium hypochlorite. This chemical contains from 30 to 32 per cent chlorin, which forms in the water hypochlorous acid and results in sterilizing the water. The process is one of oxidation. In the strength used, waters highly infected are rendered safe. Of course, in such strengths (1-500,000) grossly polluted water, such as sewage, will not be rendered safe. Water ordinarily used will be entirely safe after being so treated. As the chemical acts more efficiently in clear waters, a filter cloth, to be fastened over the opening of the bag, and weighing one ounce, is provided, or water may be strained through a blanket. The bag is filled after it is in place. Suspended matter, such as clay, is largely removed and not left to interfere with the action of the chlorin.

(d) *The bacteriological efficiency of the appliance.* The organisms causing typhoid fever, the dysenteries, including amoebic or tropical dysentery, and ciliates are promptly destroyed. Even in the vegetative form amoebae are killed in 15 minutes—ordinarily 5 to 10 minutes suffices after the addition of the powder to render the water safe to drink. Exposure of 30 minutes has been found to destroy all amoebae and ciliates under most severe conditions in a test.

B. *Sterilization of water by heat.* In the absence of chemical means suspected water must be boiled. The soldier may prepare it as coffee, tea or soup.

(2) *Only recently cooked and properly served food is allowed.*

(3) *Absolute protection of food supply of all kinds and persistent warfare on the fly are imperative;* to this end, all kitchens and food must be effectively screened.

(4) *All refuse burned and constant warfare made against breeding places of the fly.*

(5) *Frequent bathing, the washing of hands before eating, attention to laundering underclothing, and general personal cleanliness are obligatory, especially of doctors and nurses.*

(6) *The early detection, isolation, and treatment of cases and "carriers" is imperative,* as well as the prompt sterilization of all articles which have been used by them. No convalescent from any bacillary bowel infection should be released from isolation until three successive examinations of his stools and urine, collected at six-day intervals, have shown him to be no longer a carrier.

(a) The Widal Reaction after typhoid vaccination is positive, appearing in about 10 days after the first dose, and it remains positive for six months to a year. This fact must be considered in diagnosing typhoid in vaccinated persons. They may give a positive Widal regardless of the nature of the illness, and the reaction is consequently of no assistance in diagnosis. If typhoid or paratyphoid fever be suspected, the diagnosis, must therefore, be confirmed by blood culture, made during the first week of the disease; (this culture will be sent to the Army Medical School or to one of the department laboratories. A subculture from any positive blood culture will be sent to the laboratory, Army Medical School, for confirmation and record).

Undetermined fevers should be regarded as typhoid until that disease is excluded. Specimens of blood from suspected cases should be sent promptly to the nearest laboratory for diagnosis.

(c) Two bottles of bile medium will be kept on hand at all hospitals (for the purpose of making blood cultures) and containers for forwarding feces, urine, and blood for diagnostic purposes. They may be obtained of the Army Medical School, Washington, D. C., the department laboratory, Fort Leavenworth, Kan., the commanding officer, Letterman General Hospital, Presidio of San Francisco, Cal., the department laboratory, Southern Department, San Antonio, Tex., the Department laboratory, Hawaiian Department, Honolulu, H. T., or the laboratory, Ancon Hospital, C. Z.

(7) Stray dogs are prohibited in camp.

(8) *Fecal fertilizer.* The use of feces and urine as fertilizers for kitchen gardens is a common practice in oriental countries, and many Chinese gardens elsewhere, if not prevented. The medical officer should assure himself of the source of vegetables especially those to be eaten raw.

(9) *Dairies.* Medical officers should likewise inspect dairies supplying troops and exchanges with butter and milk.

Meat inspection. It is usually performed by a veterinary officer.

Special measures to prevent special infections of the digestive tract.

345. Typhoid immunization. Is given to all persons entering the military service, and to civilians liable to field service with the army or on duty on transports or mine planters, except persons over 45 years of age, or who have had typhoid, or been immunized within three years.

Officers under 45 will be immunized after 5 years and enlisted men upon the first reenlistment only two courses required.

(a) *Method of immunizing against typhoid.* The first dose is $\frac{1}{2}$ c. c. (7½ m.); the second and third are each 1 c. c. (15 m.). An interval of at least seven days should elapse between doses. This interval may be extended to the fourteenth day in case of necessity.

(b) *The site of the inoculation* is the arm at the insertion of the deltoid muscle. If for any reason this site can not be used, the needle may be introduced in the back, over the lower portion of the scapula, or in the chest below the clavicle.

(c) *The method of inoculation.* The dose is to be given subcutaneously and not into the muscles nor into the skin. The arm should

be cleansed as for any other operation. Tincture of iodine painted over the dry skin, before and after the injection, has proved satisfactory.

The ampule should be washed off in an antiseptic solution and opened after making one or more cuts near the top with a file. The vaccine can be drawn out of the container with a syringe, or it may be emptied into a shallow glass dish, such as a salt cellar, which has been sterilized by boiling.

The syringe and needle should be sterilized by boiling in 2 per cent soda solution, or dipping in iodine. A fresh needle should be used for each man, or if one needle must be used on two or more men, it should be resterilized before each injection.

(d) *Contra indications to immunizing.* No person should be immunized who is not perfectly healthy and free from fever. The temperature will be taken before it is begun, and, in doubtful cases, the urine should be examined; if fever or any other symptoms of illness are present, the procedure should be postponed. This precaution is necessary to avoid inoculating men who may be in the incubation stage of typhoid or other fever. Neither beer nor alcohol in any other form should be drunk on the day of treatment. It is well borne by children and by women, using doses proportionate to the body weight, taking 150 pounds as the unit. Women should not be given the first dose during or near the time of the menstrual period.

(e) *The reaction.* The most suitable time for inoculation is about 4 o'clock in the afternoon, as the greater part of the reaction is then over before morning. There is usually some headache and malaise, and a local reaction consisting of a red and tender area about the size of the palm of the hand, and sometimes tenderness in the auxiliary glands. It is best not to require any duty for 24 hours, not to permit active exercise, such as long rides or walks. Rarely, marked general reactions occur—headache, backache, nausea, vomiting, herpes labialis, occasionally albuminuria, and some loss of body weight. The number of such reactions is exceedingly small, and, regardless of their severity, they, as a rule, disappear inside of 48 hours.

(f) *The record of immunization against typhoid.* This is kept on Form 81 (Medical Dept.) in each case, when the man leaves before the treatment is completed, a duplicate of the incomplete card should be sent by the surgeon direct to the surgeon of the new command.

On completion of the third dose, a statement to that effect, giving the date, name, rank, and organization, will be sent to the commanding officer of the organization to which the man belongs, that the proper notation may be made on the service record of every recruit.

(g) *The typhoid prophylactic (vaccine.)* The only typhoid vaccine used will be that obtained from the Army Medical School, and will be furnished on request by information slip or by telegram to the commandant. When for any reason a larger stock is on hand than appears to be needed, directions as to its disposition will be obtained from the commandant Army Medical School, upon application to him direct, stating date of receipt of the vaccine. Stock over four months' old will be destroyed when a new supply has been received. It will

keep for four months and perhaps longer when stored at low temperatures in the dark.

(h) *A fresh ampule should be opened for each day's use.* Any vaccine remaining unused in an opened ampule at the end of the day should be thrown away.

346. Paratyphoid immunization. Will be given in the same manner, in the same dosage, and with the same intervals as now prescribed for the immunization against typhoid fever, to all officers and enlisted men of the United States Army and all other persons associated with the military forces of the United States, designated for service overseas. The only vaccine used for this purpose will be mixed "A" and "B" vaccine, prepared in the laboratories of the Army Medical School, Washington, D. C., which can be had upon direct application to the commandant of the school.

(a) *Triple Typhoid Vaccine.* This contains one thousand million typhoid bacilli and seven hundred and fifty thousand each of paratyphoid A and B bacilli to each cubic centimeter of the emulsion.

(b) *Method of administration.* The same as for typhoid or paratyphoid separately. See Special Sanitary Regulations containing notes on the Control of Communicable Diseases.

347. Cholera immunization. Haffkine first introduced the inoculation of killed cholera bacilli in salt water as a preventive against epidemics. It must be made during the epidemic. It has been highly successful in Japan, India, and the Philippines.

348. Malta fever is a disease of goats due to micrococcus *militensis* transmitted through their milk. It is found in Mediterranean countries and Texas. It is prevented by not using milk from infected goats.

349. Intestinal worms. To prevent infection by intestinal worms, it is necessary to discover by microscopic examination those who are carriers and treat them with vermifuges. Thymol, Santonin, Filix mass, etc., halfcooked, smoked or raw meats, convey trichina. The soldiers' food should always be well cooked.

350. Bilharziosis, Paragonomiasis, Clonorchiasis. These flukes are swallowed as eggs in water. The developed *Schistosomum Bilharzia* gets into the blood or lymph, the mesenteric veins, and bladder wall. It prefers to live in spleen and intestines, the *Paragonimus Westermanni* lives chiefly in the lungs, but also in the liver and brain, while *Clonorchis sinensis* prefers the gall bladder and bile ducts.

351. Outline of what to tell the troops about digestive tract infection. The parasites of the diseases just named and some of the worms, when swallowed, grow well in the bowels and from there may enter the blood. Others stay in the bowels. In any case the germs and the eggs of the worms pass out of the body in the bowel movements. Some of the eggs are swallowed by animals and enter their flesh, which when eaten, partly cooked, will give worms.

(a) *Vegetables as a distributor of disease.* In some localities the inhabitants use the streams for all purposes; drinking, washing clothes, bathing, washing vegetables and table utensils and as a sewer. When kitchen gardens are irrigated with such water the germs are to be found on the cabbages, beets, etc.

In the Philippine Islands, Hawaii, and along the Mexican border, Chinese truck gardens use diluted human excrement to sprinkle over the plants and the germs may be found between the leaves of cabbage and lettuce and on parsley, radishes, beets, spinach and asparagus, even after a thorough washing.

(b) *Food, fruit, cigarettes and drinking cups as distributors of disease.* Germs are readily smeared on the hands of nurses or friends of the patient and may be transferred to articles of food, fruit, cigarettes or drinking cups, especially in public places, so that the soldier buying at the public stands is likely to have disease handed to him with his purchase.

(c) *The fly as a disease carrier.* The ordinary fly is one of the worst and filthiest transmitters of disease in existence. Flies carry germs from privies, latrines, spittoons, and sick room to the food on your table, by means of their smeared feet, in their spit, or in their specks.

Do not allow flies to breed in manure nor walk on your food. This is possible by burning manure or burying it, at least three times a week (daily is safer) or spreading it out very thin so as to dry in a hot sun which kills maggots. Use fly traps, "swatters" and fly paper. A teaspoonful of formaldehyde (obtained from the surgeon) in a saucer of water is a good fly poison.

(d) *Tuberculosis.* The germs of tuberculosis may be swallowed and after growing in the bowels pass into the blood and so go to any organ of the body. They cause a great many forms of disease, the principal ones being consumption and bone disease. Great numbers of germs are coughed up and spit out by consumptives. Most of the crippled children which we see, especially those with humped backs and hip joint disease, owe their trouble to tubercle germs that they swallowed in the milk of tuberculous cows.

(e) *Dwellings for worms; the company dog as a distributor.* Pigs, dogs, cattle and people with dirty habits, especially children are liable to have worms. The eggs of worms are passed out and are often smeared on the hands and so carried to the mouth. The company dog is often a distributor of worms to the company. He uses his tongue for toilet paper and afterwards licks his coat or licks the hands of his friends. Petting the company dog or any dog or letting him lick your hand is dangerous. You should at once wash your hands.

(f) *Trichinosis (pronounced trick-i-no-sis).* Certain very tiny worm eggs are found in the flesh of animals which, when eaten partly cooked, are swallowed alive and will grow in the bowels. In one form of the disease the worms burrow into the muscles and make little stony cocoons which give great pain like rheumatism and may cause death. This disease is called trichinosis.

(g) *Ptomaine poisoning.* Ptomaine poisoning is due to the poisons of germs that grow in spoiled meats, fish, or milk.

(h) *Water as a distributor of disease.* When the bowel movements get into water courses these germs enter the water mains of cities and towns or get into reservoirs or wells. In a great many country places what goes down in the privy comes up in the neighboring well, having traveled underground.

You cannot always tell polluted water by its appearance, smell or taste. Unless from a sewer or drain, it may look clear and sparkling, with no smell and have a pleasant sweetish taste.

(i) *Avoid water from unknown sources.* Water from sources unknown or soiled by sewage, should be avoided as deadly, even when frozen, and should not be used, unless boiled, for drinking, brushing the teeth, washing salads or vegetables, or rinsing mess kits. All drinks, especially milk, diluted with such ice or water are dangerous.

Do not drink water that is not called safe by your company commander. If you have no one to ask and are traveling, it is safer to drink tea or coffee, because they have been made from boiled water, or to drink bottled mineral waters. In the field boil your drinking water. Boiled germs are dead and will not grow. They are, therefore, harmless. Beware of water from wells, farm pumps, ponds, cisterns, water coolers and barrels, stations, and ferry boats.

Do not drink lemonade, soft drinks, or milk from peddlers around troop trains and camps. Buy these things from your post exchange. Always drink out of your own cup. Beware of the public drinking cup.

Always wash your hands before going to meals and before putting things into your mouth, especially after going to the latrine or handling animals.

Do not adopt strange dogs and do not pet dogs.

Before eating fruit or raw vegetables wash and peel them unless picked from the tree by yourself.

Do not eat food that is spoiled, smells or tastes badly or is fly-blown or maggoty or full of bugs.

Do not eat food which is not sufficiently cooked. All smoked, dried, or salt meats or fish, such as ham, bacon, sausage, dried beef, bloaters, salt mackerel, or codfish, must be well-cooked, as they may contain "Measles" or other worm eggs. Cooking kills the eggs.

Do not eat food exposed on public stands to dust, flies, dirty hands, dirty water, dirty cans, or dirty glasses and buckets. Do not wet lead pencils with your spit.

Do not wet your fingers with spit when you deal cards or turn over pages of books or magazines.

Keep the teeth brushed and the mouth clean. Have decayed teeth repaired at once. Decayed teeth drop out and they cause abscesses, which may destroy the jaw bone or cause rheumatism and brain fever. Old snags give the stomach the germs of rotting, which cause dyspepsia.

(k) *Explanation of how typhoid is prevented in the Army.* The great prevention of typhoid fever, called Typhoid Prophylactic, depends upon the fact that the typhoid germs when swallowed enter the blood, and make a poison (toxin). The body makes an antidote (Counter-acting remedy) for this toxin called an antitoxin.

Let us compare the body to an army camp	{	Rioters	}
		typhoid germs	}
enter and destroy and damage (action of the toxin).		The guard turns	
		Antitoxin is	

out made } and tries to overcome the rioters. A fight follows (this is the symptom of the disease). { The rioters }
 { The typhoid germs } are overcome
 and a period (convalescence) follows in which the { camp } is restored
 { body }

to normal condition.
 Knowing this we play a trick.

We inject fifty million typhoid germs in a little salt water under the skin. Immediately the { guard } turns out only to find the { germs }
 { antitoxin } { rioters }
 dead. Their bodies are carried off. This is the period of dizziness, headache, nausea and slight fever which some few feel after the first injection. The { guard } remains { on duty patrolling } Ten days
 { antitoxin } { floating in the blood. }
 later we repeat the trick with 100 million dead germs and more { guard turns out }
 { antitoxin is made } The increased { guard } remains { on guard }
 { antitoxin } { floating }
 patrolling. }
 in the blood }

Ten days later we repeat the trick for the third and last time when all the antitoxin possible is made. This guard or antitoxin remains patrolling in the blood for about three years or longer, so that if some live typhoid germs enter the body later and begin to make trouble they are overwhelmed by the large guard at once and no damage is done,—that is, no sickness results.

352. INFECTION THROUGH THE SKIN OR MUCOUS MEMBRANE

This class is called contagious diseases and include:

(a) Those due to bacteria or fungi.

Ringworm	Favus	Barber's Itch
Dhobie Itch	Conjunctivitis	Inflammation and
Boils and Pimples	Carbuncles	suppuration
Anthrax	Gas gangrene and	Erysipelas
Rabies (Hydrophobia)	malignant Sedema	Tetanus
Variola	Glanders	Trachoma
Varicella	Chancroid	Syphilis
	Leprosy	Gonorrhea

(b) Parasitic insects.

Lice, scabies, fleas, chiggers, bedbugs screwworms (the larvae of flies) and trombidia.

(c) Parasitic Worm. The hookworm, ancylostoma, and uncinaria.

353. The prevention of skin parasites, and wound infection is, when attainable, a mere matter of individual personal cleanliness, but

when field service renders it individually difficult or impossible, then sanitary arrangements on a large scale are necessary.

354. The prevention of hookworm. This is made necessary in occupation of infected localities, or when hiring laborers in the tropics.

(a) Treating all those infected. (santonin, thymol, or beta naphthol)

(b) Insist on the use of latrines (by the civil population as well).

(c) Insist on the wearing of shoes by everyone when out of doors.

355. The prevention of myiasis. Just how the lava of dermatobia cyaniventris and other similar blow flies are deposited in the skin is a mystery, and the unwilling host is never able to say when it happened. The first sign of the parasite is the moving larva. The use of a mosquito bar and long sleeve shirts when sleeping in the open in the tropics is a means of prevention.

356. The prevention of leprosy. Is a matter of no importance unless association with lepers occurs, then the lepers should be isolated and cared for, their laundry boiled, baths provided; all attendants must be strictly compelled to wear rubber gloves when working among them.

357. Prevention of rabies.

Before the bite.

(1) Muzzling dogs.

(2) Prohibiting dogs at large in camp.

(3) Killing stray dogs.

After the bite.

Pasteur treatment may save if used before symptoms of hydrophobia set in. After they begin it is too late.

(a) *How antirabic virus is obtained.* Through the courtesy of the Public Health Service, the virus will be furnished by the Hygienic Laboratory, Washington, D. C. Whenever antirabic treatment for any person at a post is deemed necessary by the surgeon, he will telegraph a request for the same to the director, Hygienic Laboratory, Twenty-fifth and E Street, N. W., Washington, D. C. Post surgeons in the Western Division should also telegraph, at once, a requisition to the medical supply officer, San Francisco, Cal., for the virus for beginning the treatment. This should be done in order that the treatment may be begun as early as possible. The incubative period is shorter in children and in bites of the face and head, and wounds in these parts are the most dangerous.

(b) *What to do with the rabid animal.* The animal that is supposed to be rabid should be secured, if possible, and kept under observation until the diagnosis can be positively made. After the death of the animal, or if the animal is killed and it is impracticable to examine the brain for Negri bodies at the post, it should at once be sent either to the laboratory of the Army Medical School, Washington, D. C., Fort Leavenworth, Kan., or the Letterman General Hospital, San Francisco, Cal. If the brain will reach the laboratory within 24 hours, it should be carefully packed in ice, otherwise the brain, or at least that portion of it containing the hippocampus, should be placed in pure glycerine.

(c) *Record of the case.* A careful record of the case should be kept describing the injury, the treatment, and subsequent history, with dates. All the details regarding the rabid animal and the data upon which the diagnosis was made should be included. Upon completion of the treatment a copy of this record should be forwarded to the Surgeon General of the Army for transmission to the director of the Hygienic Laboratory.

(d) *Directions for the Use of Rabies Virus Shipped from the Hygienic Laboratory, Public Health Service, Washington, D. C.*

(1) *Preservation of virus.* The virus should be kept in an ice box or other cold place. This material is perishable and must not be kept on hand for future use. Each bottle contains the number of doses required, until further shipments are made, of cord dried for the number of days indicated on the label. Further shipments of cord to complete treatment already begun are made without further request.

(2) *Dose.* Each small section of cord (about 1-8 cm.) constitutes one dose. The following equipment is necessary for making and using the emulsion; Physiological salt solution; alcohol; absorbent cotton or gauze; glass or porcelain mortar and pestle (capacity 10-20 c.c.); thumb forceps; hypodermic syringe (at least 3 c.c. capacity), with large needle; glass pipette, 5 c.c., graduated at least to 0.5 c.c.; small conical test glass or beaker or other small container. These must be sterilized and then the instruments, etc., rinsed in sterile salt solution. The technique must be aseptic throughout.

(3) *To make the emulsion.* Remove one section of cord from the bottle with the thumb forceps and rinse it free of glycerine with sterile salt solution in the small glass container, place it in the empty mortar, and, without the addition of any fluid, rub up as finely as possible. Then $2\frac{1}{2}$ c.c. of the salt solution are gradually added by means of the pipette, taking care between the additions of the salt solution to rub to a uniform consistency. Draw all the emulsion into the syringe.

(4) *How to give treatment.* Scrub the skin at the site of inoculation with alcohol and inject the emulsion into the subcutaneous tissue, being careful not to injure muscular layers or visible veins. Alternate successive injections on the two sides of the anterior abdominal wall.

SCHEME FOR INTENSIVE TREATMENT

Twenty-five doses

Day of treatment	Cord marked	Number of injections	Amount injected		
			Adult	5 to 10 years	1 to 5 years
			c. c.	c. c.	c. c.
1	8-7-6	3 injections, interval 3 hours	2.5	2.5	2.5
2	4-3	2 injections, interval 6 hours.	2.5	2.5	2.0
3	5-4	do	2.5	2.5	2.5
4	3	1 injection	2.5	2.5	2.0
5	3	do	2.5	2.5	2.0
6	2	do	2.5	2.0	1.5
7	2	do	2.5	2.5	2.0
8	1	do	2.5	1.5	1.0
9	5	do	2.5	2.5	2.5
10	4	do	2.5	2.5	2.5
11	4	do	2.5	2.5	2.5
12	3	do	2.5	2.5	2.0
13	3	do	2.5	2.5	2.0
14	2	do	2.5	2.5	2.0
15	2	do	2.5	2.5	2.0
16	4	do	2.5	2.5	2.5
17	3	do	2.5	2.5	2.5
18	2	do	2.5	2.5	2.0
19	3	do	2.5	2.5	2.0
20	2	do	2.5	2.5	2.5
21	1	do	2.5	2.5	2.0

358. Prevention of glanders.

(1) Teamsters, orderlies, and mounted men should be warned and made to wear gloves.

(2) Suspected animals should be given mallein.

(3) Thorough cleaning of nose, throat, eyes, and hands, by use of a gargle, an eye wash, soap and water, after handling an infected horse.

(4) Burial or cremation of animals dead of glanders.

(5) All mounted men and teamsters should wash their hands before every meal. This matter must be in the hands of the veterinarian.

359. Prevention of smallpox.

(1) All recruits upon enlistment and all soldiers upon reenlistment shall be vaccinated. When vaccination of a recruit is noneffective, it will be repeated at the end of eight days.

(a) All the personnel of a military command, station, or transport, including civilians connected therewith, will be vaccinated, when, in the opinion of the surgeon, it is necessary. Civilians refusing to be vaccinated when so directed by proper authority may be excluded from the military reservation or station.

(b) Officers should be vaccinated at least once in a period of seven years. Troops under orders to perform over-sea journeys or field service will be inspected by a medical officer with respect to their protection against smallpox, and those who in the opinion of the medical officer require it will be vaccinated. Par. II, G. O. 30, 1914.

(c) As soon as a recruit joins any organization, depot, post, or station he will be examined by the surgeon to ascertain whether vaccination is required. In all cases where there is not unmistakable evidence of successful vaccination within a reasonable period the operation will be performed immediately. Vaccination virus is supplied by request to Dept. Surgeon, stating number of points desired (letter) M.M.D., Page 250, note e.

(2) *Method of performing vaccination.*

(a) *The skin at selected site must be clean;* antiseptics are not necessarily employed; should they be used they must be washed away with sterile water that the activity of the virus be not destroyed. Washing with warm water, followed by alcohol, is usually sufficient, the alcohol being permitted to evaporate before proceeding. Scrubbing with soap and water is necessary for a dirty skin, but needless irritation of the skin is to be avoided.

(b) Use the point of a sterile needle, producing two incisions (scratches) three quarters of an inch long and one inch apart; after exposure to smallpox four incisions will be made. "Sacrificing" will no longer be used: Incision is the method of choice. A sterile scalpel may be used; but is more likely to cause bleeding. The incision or scratch should preferably not draw blood. The virus is then placed upon the abraded surface and gently rubbed in, unnecessary irritation being avoided.

(c) *The scratches are allowed to dry thoroughly without dressing,* gauze may be applied with adhesive plaster. Any dressing that retains heat and moisture is bad. *Shields will no longer be used.* Bathing is permitted, but unnecessary use of the limb is to be discouraged when practicable.

360. Prevention of venereal diseases. (G. O. 17, 1912, G. O. 71, 1913.)

(1) Commanding officers will require that men who expose themselves to the danger of contracting venereal diseases shall at once upon their return to camp or garrison report to the hospital or dispensary for the application of such cleansing and prophylaxis as may be prescribed by the Surgeon General. This prophylactic treatment consists of:

(a) Washing the penis thoroughly with soap and water.

(b) Injecting into the penis a solution of 2% Protargol (2 parts in water to make 100) which must be kept in the penis for 5 minutes, by the watch, in order to kill the clap plants. This is done by pinching the opening of the penis. Repeat this.

(c) Rubbing thoroughly all over the penis an ointment (of Calomel 30 parts in Benzoinated Lard to make 100 parts). Protect this by paper or cloth. This is to kill syphilis and chancroid germs.

(Note) This treatment has also been put up in a collapsible metal tube inside a cigar shaped container to be carried in the vest pocket. It is called a "K packet," and is sold by drug stores and some post exchanges for a few cents.

Any soldier who fails to comply with such instructions shall be brought to trial by court-martial for neglect of duty.

In the field this is given at the camp infirmaries. A trained attendant must give the treatment as it must be given properly otherwise the procedure becomes a farce.

(2) A medical officer, accompanied by the company or detachment commander, will make a thorough physical inspection twice in each month of all the enlisted men (except married men of good character) of the command.

(3) Cases of venereal diseases will be promptly subjected to treatment, but not necessarily excused from duty unless deemed desirable. They will be made of record in the medical reports in any case. A list of those diseased but doing duty will be kept both by the company or detachment commander and the surgeon, and the infected men will be required to report to a medical officer for systematic treatment until cured. While in the infectious stages the men should be confined strictly to the limits of the post. When a venereal case, whether or not on sick report, is transferred to another command, the surgeon will send a transfer slip, giving a brief history of the case.

(4) *Discipline.* All those who expose themselves, and contract venereal disease are punished by stoppage of pay and restriction of privileges while under treatment and they must make good the time lost.

361. Suggested outline of what to tell the troops about contagious diseases.

(a) *Ringworm, mange, barber's itch, dhobic itch*, and some forms of eczema are due to small plants, called "Fungi," which resemble the mould which grows on cheese or the mildew on leather. They are carried from person to person by finger nails and hands and from dirty water, to those who bathe in it or have their underwear washed in it. Children and recruits are often infected.

(b) *The germs that cause inflammation in wounds, boils, abscesses, and blood poisoning* are always to be found on the skin and are everywhere in nature where men and animals are found.

(c) *The germs of lockjaw, gangrene, and gas gangrene* are found in manure and in soil fertilized with it; hence, a bullet which passes through such soil before wounding carries these germs into the wound. Any wound soiled with such dirt will be infected. Also, wounds made by toy pistols and fire-crackers often contain lockjaw germs.

(d) *Glanders* is a disease of horses and mules. The germs are caught from the running noses of the animals which may sneeze in the face or on the hands, and so be carried to the nose or eyes of the man.

(e) *Hydrophobia* is caught from the bite of mad (rabid) dogs. The germs of hydrophobia are in the spit of mad (rabid) dogs, and travel through the nerves from the bite to the brain.

(f) *Chickenpox and smallpox* are caught by touching patients or handling objects which they have handled, as handkerchiefs, towels, bedding, pet animals, or toys.

(g) *Chancroid, syphilis, and clap* are called venereal diseases. Their germs are usually caught from prostitutes, or from husbands who have caught the germs in this way, but they are often caught in other ways than through sexual intercourse, and by innocent persons.

(h) *The chancroid plant* causes a very nasty sore, the chancroid, which often destroys much flesh and causes buboes. The germ can be carried on the fingers to any part of the body. When the chancroid is healed and the bubo becomes a scar the disease is cured.

(i) *The syphilis germ* will grow first where it is rubbed in, causing a hard ulcer, called a chancre, and after that it travels through the entire body. No place is sacred to its destructive power and it lives as long as the patient does. It is the cause of much insanity, palsy, apoplexy, deafness, blindness, and early death. In mothers it causes miscarriages and in children it causes stillbirths, freaks, deformities, feeble minds, and idiots; also deaf and dumb, palsied, stunted sickly, and criminal conditions.

A syphilitic person is always dangerous although apparently well. He often has a sore mouth and his spit is as dangerous as that of a mad dog. The bite of such a man will develop a chancre and any pipe, cup, or tooth pick he has used or his kiss, will give syphilis. A syphilitic tattooer who wets his needles and his India ink with spit will put a chancre into the skin with the picture.

The instruments of cheap advertising dentists and of quack doctors or ignorant nurses can carry these germs from one person to another. So can the razors and caustic stick of barbers who are careless.

(k) *The clap plant* grows best in the linings of the openings of the body where it is dark and warm and moist, causing a catarrhal discharge called clap, which is easily smeared on the hand, and thence transferred to others by means of towels or handkerchiefs or by actual contact.

It grows well in the eyelids, causing great damage and often blindness. Babies get the clap plant into the eyes during birth, from the mother, and unless treated within a few minutes after birth, have sore eyes and go blind—a terrible calamity to the child and the family. If you have clap the germs can be carried on your hands to your eyes.

The clap plant also grows well in the cavities of the joints, causing rheumatism and crippling; it grows in the heart, causing valvular heart disease, which is incurable, and also in the generative organs of men and women, causing self-made eunuchs and childless wives. It is the cause of most of the severe abdominal diseases of women requiring the use of the knife to cut out the diseased part.

The venereal diseases cause more misery than any others and most of the doctors would have to go into other professions to earn a living if these diseases did not exist.

When a young man is "sowing his wild oats" he is really planting in his own body the syphilis and clap plants, and the harvest will be greater than any other crop. He will reap it in days of bed-ridden misery, and possible sudden death. He will reap it in bitter hours by the bedside through the illness and death of his wife or in her long years of ill health. He will reap it in little white coffins, idiot babies; blind, deaf and dumb, sickly and stunted children. And it will cost him lost wages and hospital and doctor fees.

Yes, the wild oats is a bumper crop. King Solomon was wise when he warned his son against the harlot, "for her end is bitter."

(1) *The hookworm.* The hookworm eggs pass out of the body and hatch in damp soil. The little worms will enter the skin of the bare feet causing "ground itch" or "dew itch." They can travel to the lungs, pass up the windpipe and are swallowed. When they reach the small bowel they attach themselves to the lining in great numbers and poison the blood so that it becomes very thin and makes the patient extremely weak and an invalid.

(m) *How to avoid these diseases:*

Keep your skin clean with soap and water.

Do not bathe or wash your clothes in dirty water, have them boiled when laundered.

Do not go barefoot, even in barracks.

Do not use towels or toilet articles of other people, especially in public washrooms unless they furnish a fresh towel for you. Do not sleep in houses left empty by the enemy unless ordered to do so.

Do not sleep in native shacks in the tropics.

Do not rub the eyes with dirty hands. When dirt gets in have a doctor get it out.

If you have clap, do not rub eyes with your hands, and wash your hands well with soap and water after taking treatment or passing water.

Do not handle dogs or cats, especially strange or sickly ones.

Do not clean the ears with sticks—have a doctor do it for you.

Do not have cheap, advertising dentists fix your teeth. Have the army dentist fix them and see him at least once every six months—or see a good civilian dentist.

Do not have pictures tattooed on your skin.

Do not smoke other men's pipes.

Do not handle or touch wounds with anything but a first aid package.

Beware of chipped drinking glasses in cafés, restaurants, and other places. The slightest cut from such a glass whose chipped part has been in contact with the mouth of a syphilitic person will give you syphilis.

The company barber must scald his razors and soap after every shave and must not use caustic stick on sores and cuts.

Smallpox is prevented by rubbing the germs of cowpox, a very mild disease, into a scratch in the cleaned skin. This is called vaccination. The body makes an antitoxin to cowpox, which is also an antitoxin to smallpox.

Hydrophobia is prevented by avoiding dogs, by having pet dogs muzzled and by catching and tying up or killing strange dogs. There is no hydrophobia in England or Australia because for a number of years all dogs were muzzled. Now dogs do not have to be muzzled there.

If bitten by a rabid dog, you must take the Pasteur treatment as soon as possible.

Seek good companions like your mother and sister. Keep away from John Barleycorn. He always wants to turn you over to a harlot.

Whores and prostitutes are all diseased and will give you germs that will live to give disease to you, your wife and your children, forty years from now. Keep away from them.

War Department orders regarding venereal disease. General Orders No. 31, W. D., 1912 and General Orders 45, War Department, 1914 direct that no enlisted man absent from duty on account of disease resulting from his own intemperate use of drugs or alcoholic liquors or other misconduct shall receive pay for the period of such absence, and he must make good the time lost.

Explain General Orders No. 71, War Department, 1913, amending G. O. 17, W. D., 1912. See par. 360.

Should you discover that you have clap or other venereal disease, report to the hospital at once for treatment. You will receive the best possible treatment and it will cost you nothing. Don't commit the error of attempting to hide your misfortune or of going to some cheap civilian doctor in the hopes of keeping the facts from the military authorities. It is much better to go to the hospital immediately, receive proper treatment, and forfeit a few day's pay than it is to risk your future health and happiness.

362. Diseases due to direct infection of blood and lymph streams. This infection usually occurs as the result of the bite of an insect host or carrier. The diseases are:

Malaria	Trypanosomiasis	Plague (bubonic)
Dengue fever	Papataci fever	Rocky mountain fever
Relapsing fever	Yellow fever	(spotted fever)
Typhus	Filariasis	

363. Occurrence of insect born diseases. The peculiarity of this class of disease is that they are endemic in rather well defined geographical localities, which correspond to the habitat of the insect responsible, therefore avoidance of the locality prevents the disease usually, unless the infected insect be imported by train or ship, and when in the locality, methods of prevention are those directed against being bitten by the insect, and preventing uninfected insects from becoming infected by biting infected persons (actually well and carriers) and by fighting the insect.

364. The germs of malaria, yellow fever and dengue fever live in the blood.

Malaria germs will develop only in the species *Anopheles*.

Yellow fever germs will develop only in the species *Aedes calopus*.

Dengue fever germs will develop in the *Culex*, and in *Anopheles*.

After a period of development in the stomach walls, the germs find their way to the salivary glands, and are injected into the person whom the mosquito bites. (Note) Male mosquitoes cannot bite.

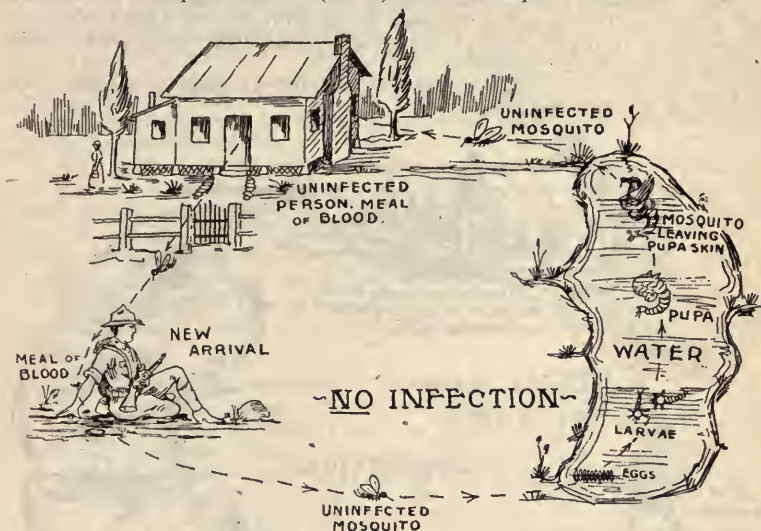


FIG. 2

The malaria mosquito can get the germs any time she bites a person who has them in the blood and many persons have them long after getting well of the chills and fever. They are carriers. The malaria mosquito cannot give the germs to another person until they have passed through a period of about 12 days' growth in her body. Then she can give them as often as she bites.

The yellow fever mosquito must bite the yellow fever patient during the first three days of his fever, for after that time the germs are not in his blood. She then must have them develop in her for twelve days before her bite is deadly.

Filariasis. A condition marked by the presence of filaria, minute filiform nematodes in blood and lymph transmitted by *Culex fatigans*.

The only way that malaria, yellow and dengue fevers can possibly be caught is from mosquitoes.

365. Prevention of mosquito borne diseases. This is attained by the isolation of the patient promptly under a mosquito bar in a mosquito proof ward or hospital, during the infectivity of the patient. (Yellow fever for first three days only.)

2nd. Treatment of malaria patients with therapeutic doses of quinine.

3rd. Fight the mosquito.

4th. Personal protection.

(a) Mosquito bars, mosquito proof dwellings, head net, and gloves for night use (on guard.); keeping away from native habitations and settlements at night (camps must be at least 500 yards away from native houses in the tropics.)

(b) Prophylactic daily doses of quinine at least (6 grains) 400 mgms. in malaria regions.



FIG. 3

366. Mosquito control. To do this we must know their habits.

Mosquitoes all lay eggs in water. These hatch out as wigglers or larvae, which have to come to the top frequently to breathe. In about twelve days or longer they turn into tumblers or pupas, which in

a few days longer come to the top when their backs split open and the mosquito comes out and flies away.

367. Habits of the malarial mosquito. She is domestic like the chicken and lives around and in houses, hiding in the grass, bushes, or dark corners and comes out to bite at night. When a settlement is abandoned the malaria mosquito moves away also. She rarely flies far from home and is not found much beyond 500 yards from a house. She lays her eggs in running clear water preferably, such as streams and ditches, but she will accept water in hollow trees, between the leaves of lilies or air plants or in vases of flowers, or in cisterns and water butts and trenches.

368. Habits of the yellow fever mosquito. She is domestic like the house cat. She hangs around the house and rarely flies as far as the next house even, preferring to travel on a visitor's coat. She will bite in the day time and will lay her eggs in any little collection of water in the house, the eaves trough, the water barrel, old tincans or bottles, pitchers, vases or the refrigerator drip.

369. Habits of the dengue mosquito. She is a marsh and town mosquito. She flies far and well and will breed in any sort of water, even brackish.

370. To prevent mosquito breeding. See par. 447.

371. Bubonic plague. Is a disease of rats, squirrels and other small fur bearing animals found in China, Hawaii, the Philippines, and in California, Idaho, Oregon, Washington, New Orleans, and Mexico. The bacillus pestis is carried by fleas which bite the rat and then when the rat dies of plague the flea hunts another rat or some person in the house and bites him, giving him the germs, which are about the mouth of the flea or in its excrement for about 6 days after infection.

372. Pneumonic plague. This form may arise from the preceding form whereupon it assumes the characteristics of a lung infection and is transmissible in the same way as pneumonia or diphtheria.

373. Prevention of plague. Plague is prevented by isolating patients, ridding the town or city or ship or building of rats by killing, trapping, closing up burrows, removing trash and rubbish and making concrete cellars and tin lined granaries.

Ships prevent rats from boarding by a tin shield around the ropes that fasten them to their docks.

Squirrels, weasels, and woodchucks, sometimes have plague. It is wise not to pick up dead squirrels, weasels, or rats except with tongs.

374. Typhus fever is transmitted by the bite of body lice, which may remain infective for about five days after feeding. (Prevention of typhus fever, Bul. 10, 1916, and G. O. 45, 1916.)

375. Prevention of typhus fever.

1. Destruction of lice and nits in clothing.
2. Personal cleanliness.
3. Clean clothing.

4. Avoidance of louse infected places and typhus patients.

5. Use of a louse powder and wearing louse proof clothing.

376. **Sand-fly fever** is carried by the *Phlebotomus papatasi*, which is found only in Asia and the countries bordering on the Mediterranean Sea.

377. **Trypanosomiasis** of human beings is a disease called sleeping sickness due to the trypanosoma Gambierse, transmitted by the bite of flies, glossina palpalis, and glossina morsitans, and is found only in Africa.

378. **Rocky Mountain fever** (spotted fever) is a disease of wild game in the northern part of Idaho and in the Bitter Root Valley in western Montana. It is carried to trappers, hunters, prospectors, and others by ticks (*Dermacentor Andersoni*) which infest the game.

379. **Prevention of Rocky Mountain fever.** Camps of hunting parties should not be allowed in the specially infected localities.

380. The enlisted men should be told the following general facts concerning the military value of good health.

- The strength of an army is not in its muster rolls, but in the number of men able to fight. Every sick man takes one rifle away from the firing line.

Good health is just as necessary to any army as rifles and ammunition.

A sick army is only a hospital, and no hospital has ever won a battle.

Because of the great demands upon the body by marching, exposure to all sorts of weather and other hardships, and the nervous and physical strain of modern battle, because of these demands upon the body, there is no other business in the world whose success depends so much on good health as does the business of soldiering.

Indeed, it is just as necessary for you to take care of your health as it is for you to take care of your rifle and ammunition.

The importance of doing everything possible to care for one's health is shown by the fact that history shows that in every war so far, many more men have died from disease than were killed in battle or died from wounds.

In our Civil War, for instance, for every man on the Union side who was killed in battle or died from wounds, two died from disease. In the Spanish-American War the proportion was one to five and one half.

381. **The greatest protection against illness.** A healthy body prevents sickness. There are some persons who have never been ill in their lives because they have healthy bodies which are able to meet and conquer germs and their toxins.

If, however, even the most robust and healthy person be starved, his body chilled, or overheated, or exhausted from fatigue or lack of sleep, or poisoned by alcohol or drugs, or his mind depressed by fear, worry or disappointment, or if he dwell in filth and foul air, he will readily become sick from some attacking germ.

A cur dog can worry an exhausted lion—and so can small germs get the best of an exhausted man.

Taking care of the body is the best way to keep in good health.

CHAPTER VIII

FIELD SANITATION

382. Definition. Field sanitation is the art of keeping troops physically fit for service, when out of garrison.

383. The scope of field sanitation. Field sanitation concerns itself with all those things which affect the soldiers' health when out of garrison, namely, food and drink, clothing, shelter, cleanliness, disposal of wastes, exercise, accommodations afforded during transportation by train and water and the prevention of disabilities not due to combat.

384. The importance of field sanitation. Officers and men of the army are required to have a knowledge of sanitation. Field Service Regulations, state that the adoption and carrying out of sanitary measures are a source of military strength which cannot be overestimated.

385. Responsibility of line officers for field sanitation. Commanders of all grades are responsible for the sanitary conditions and enforcement of sanitary regulations in their commands, which imply responsibility for promptly correcting sanitary defects reported to them, and they must also do their utmost to encourage healthful exercises and physical recreation of their commands. Company officers are especially bound to instruct their men in the disastrous results of intemperance and sexual lawlessness.

386. Responsibility of medical officers for field sanitation. The Medical Department is charged specifically with investigating sanitary conditions and making recommendations in reference thereto. Medical officers are expected to be familiar with approved methods for preventing the spread of infectious disease and will be held responsible for their application at all times.

387. Sanitary inspections. Sanitary inspections may be made by medical officers especially designated as sanitary inspectors, but the senior medical officer serving with any military organization will make the necessary sanitary inspections of his command.

388. Sanitary inspections of divisions or other independent commands. A medical officer of experience, designated the sanitary inspector, is charged, under the direction of the division surgeon, with investigation of sanitary conditions of the division. He is required to submit reports to the division surgeon copies of which are always given to local commanders of troops reported upon.

389. Authority of division sanitary inspector. He may be authorized by the division commander in his sanitary order, to direct the correction of unsanitary conditions in any organization.

390. Authority of medical officers with organization. The senior medical officer on duty with a regiment or similar organization is the sanitary advisor of its commander. He makes the inspection required by orders or regulations and any others necessary. He may be authorized by the commanding officer to direct the correction of sanitary faults, where corrigible by company commanders.

391. Inspections preparatory to taking the field. Before troops take the field or leave for a concentration camp, all the personnel including civilians who are to accompany it, will be subjected to a critical examination to determine their physical fitness to take the field, and freedom from epidemic disease, and will be protected against typhoid, paratyphoid and smallpox if not already protected.

SANITATION OF MARCHES

392. Marches in time of peace. Troops in time of peace make practice marches for training and hardening the personnel or marches in changing station, which may also be utilized for the same purposes. Inasmuch as there is no particular exigency compelling or affecting the progress of the troops the length and other characters of the march may be adapted to the condition of the troops or modified by their states of training, the conditions of the roads and nature of the weather. Every occasion is improved by utilizing the sanitary measures taken for instruction purposes.

393. Marches in time of war. Marches in time of war vary in character according to whether they are concentration marches, marches in the presence of the enemy, forced marches, or night marches.

394. Length of marches. A maximum day's march for infantry and trains is about 28 to 30 miles. A march of this character can not, as a rule, be prolonged more than 36 hours. If a forced march is to continue for several days, it becomes practically a succession of daily marches of more than average length.

Under favorable conditions of road and weather a rate of 50 miles in 24 hours can be maintained for three or four days. On such marches the usual hourly halts are made; in addition, a halt of 2 hours is made at the end of the first half of each day's march, during which the horses are unsaddled and permitted to roll, feed, and lie down. The rate is about 5 miles an hour, excluding halts.

Under very favorable conditions a single march of 100 miles can be made in from 24 to 30 hours. On such a march the usual hourly halts are made; in addition, halts of 2 hours are made at the end of the first and second thirds of the march, during which the horses are unsaddled and permitted to roll, feed and lie down. The rate is about $5\frac{1}{2}$ miles an hour excluding halts.

For distances from 30 to 40 miles a rate of 6 miles an hour, excluding halts, can be maintained under favorable conditions of road and weather. If the command be small, well seasoned, and lightly equipped, the rate may be even greater. The usual halts are made.

If the distance to be covered by forced marches is about 150 miles, the march begins at a rate of not more than 50 miles a day. For distance greater than 200 miles the daily march is from 30 to 40 miles.

395. Preparations for the march. When possible, ample notice is given to the troops of the time to break camp in order that preparation may be made without haste. If the hour of starting be in the early morning, time is allowed for breakfast, if possible; the medical officers hold sick call and eliminate those unable to make the march. When possible, those likely to be disabled for some time are sent back with an attendant, and trivial cases are taken in the ambulance. Company commanders inspect the bare feet of their men (if foot troops) and see that canteens are replenished, fires put out, grounds policed, pits filled in, and that refuse is put into the latrines which are filled up last thing before starting by a designated soldier. (Note: The necessary ambulance service is furnished from an ambulance company, or if the regiment be detached, it has 3 ambulances assigned it.)

396. Conduct of the march. The march is conducted by orders which prescribe the forming of the column, the hour of starting, the rate, length of march, route, etc. This is controlled by the tactical conditions governing the occasion for the march. The march is habitually at route order and no compliments as a rule are paid. (Individuals salute as required by regulations.)

397. Sanitary elements of a successful march. A successful march, whether in peace or war, is one that places the troops at their destination at the proper moment and in the best possible condition and can only be attained by careful preparation, strict discipline, and close attention to the endurance of the troops.

398. Forced marches. These are taken only as a matter of necessity as they cannot be made without injury to the troops except where the men are well seasoned, in good condition, and the march is conducted with good judgment. The termination should find the troops able to accomplish the object of the march. Forced marches with foot troops are generally made by increasing the number of marching hours, as the increase of pace especially for large commands, exhausts the men, and defeats the object of the march. When the road is level, mounted men occasionally are required to dismount and lead their horses. The clothing is loosened, equipment shifted.

399. The marching shoe. This shoe is built on the Munson last and is fitted to the soldier by his company or detachment commander, the record of his size being kept on his service record. This shoe differs from the garrison shoe in that it is unlined, of the blucher type, and has the smooth surface of the leather on the inside next the foot, and the unfinished, or flesh side, of the leather is turned out. The quarter extends to the sole, while the stiff counter is on



FIG. 1

the outside, as is the foxing. This construction is opposite to that of the ordinary boot. The sole is of double thickness and has 54 round-headed hobnails, while the heel has 15 of these in addition to a horseshoe-shaped steel plate.

400. The effect of weather. The different kinds of weather have a double effect upon the troops, directly and through the condition of the roads.

(a) *Rainy weather* increases the discomforts of the march by bogging the roads which gives

each lifting of the foot the extra weight of several pounds of mud, and increasing the weight of equipment and clothing, which may become 10 lbs. heavier thus hastening exhaustion. Chilling reduces vitality and conduces, especially where conditions compel sleeping in wet garments during the night, to lung and other visceral congestions, causing pneumonia and diarrhea. This is not so likely in the tropics where sleeping in wet garments does not result in other than personal discomfort and skin irritation provided one is covered from the night breezes.

(b) *Hot weather.* One of the greatest sources of hardship on a march, especially for infantry, is hot weather. Every precaution is taken to prevent suffering from this cause. Halting places are selected when practicable where there is shade and free circulation of air; men are cautioned against drinking too much water. Green leaves or a moist handkerchief in the hat afford relief from the hot rays of the sun. If the men are overheated, care is taken to prevent them from being chilled by exposure to cold winds or drafts. In hot weather, especially in the tropics, it may be desirable to avoid the midday heat. If the march is long, the command may make an earlier start, or it may rest for three or four hours during the hottest part of the day and finish the march in the evening. As a general proposition, however, it is undesirable to arrive at a strange place after nightfall or even late in the afternoon.

(c) *Cold weather.* Cold weather when clear and the ground is free from snow is excellent for marching provided there be no wind. Exertion is increased by wind and slippery snowy roads, and in Alaska, it is possible to freeze the lungs by over exertion when the temperature

ranges about 45° below zero, also, unless care is exercised, the fingers and external genitals may be frozen when attending Nature's calls.

(d) *Mountain marching.* Although this is usually combined with rough and precipitous trails or roads, it is in the main agreeable because of the shade, the coolness of the altitude, the hardness of the trails, and presence of clear springs of good water.

401. Straggling. This is one of the conditions which can be cured by practice and discipline. The greener the troops the worse the straggling. No man leaves the ranks without permission and it is the duty of all officers and noncommissioned officers to prevent straggling.

When men are sick they obtain a note from the company commander to the surgeon, who examines the man and returns the note, giving the disposition of the case.

Medical officers should investigate every case of straggling in order to decide whether or not the man is in need of medical attention; fatigue differs from exhaustion and raw, blistered feet from tired feet.

402. Exhaustion on the march. This is a condition which must be avoided by every means. The surgeon of a regiment should begin the march at the head of the column with one of the junior medical officers marching at the rear of each battalion and the ambulance at the rear of the regiment with the detachment medical department. At the first halt he should ride back noting the general appearance of the men, and take his station at the rear of the column. At each halt thereafter, he should ride forward through the command, observing the condition of the men. When the march commences he lets the command pass by and takes his place at the rear. In this manner he keeps in touch with the commanding officer and has a constant knowledge of the condition of the troops. Should straggling and exhaustion occur he is in a position to report and advise in order that the conditions may be ameliorated. When troops are tired, much relief especially to feet and legs is experienced by lying on the back and putting the legs straight up in the air for a few moments.

403. Heat exhaustion occurs in all parts of the temperate and tropical zones. In the tropics it is characterized by severe cramps of the voluntary muscles, with excruciating pains and more or less impairment of consciousness. The man falls out as though struck in the head, the pulse is streaky, the skin dry and cold. The condition lasts about ten minutes to an hour, leaving the man exhausted and unable to march.

(a) *The causes of heat exhaustion.* Immaturity, green troops, prolonged marches, over eating and drinking and excessive perspiration, alcoholic and venereal excesses, convalescence from illness, chewing tobacco while marching, excessive humidity, and wet clothing, all reduce resistance and sap vitality.

Both excessive water drinking and the use of tobacco increase the work of the heart, and raise blood pressure.

404. Sunstroke. This is really an insulation hyperthermia. It is unknown in the tropics and arctic zones or at high altitudes. Its causes are not necessarily direct exposure to the sun, but rather to excessive heat combined with increase of body wastes, which acting as a poison, interfere with the heat regulation centres of the body, because sunstroke may occur in factories and mills where sunshine has little or no direct effect. Among troops it occurs especially in hot dry weather in places where there is much reflection and radiation from the ground combined with air stillness. Parades in cities, and fighting in high grass, cause many such cases.

405. Siriasis or over stimulation by sunshine occurs as a progressively increasing neurasthenia in tropic countries where the heat is intense for long periods night and day and it cannot be altogether separated from the effects of the use of alcoholic drinks.

406. Use of water on the march. Every soldier should be required to drink freely just before starting out in the morning. The canteens should be filled with water only and he should not drink more than two canteens full of water in a fifteen mile march unless perspiration be excessive. Drinking should be done by sipping not gulping and only during the halts and not while marching. Thirst is usually caused by marching with the mouth open, talking and whistling, or smoking or chewing tobacco, or it may be due to excessive dust, heat, and much perspiration. Keeping a pebble in the mouth keeps the mouth closed and moist, and a handkerchief across the nose keeps out dust of the roads. Tobacco should not be used during the march but after camp has been made.

The drinking of large quantities of water during the march increases the bulk of the blood, thereby adding directly to the working of the heart and dilutes the blood, reducing its reparative value and oxidizing coefficient.

407. Supply of water on the march. In the absence of excellent and uncontrovertible proof to the contrary, water from all sources is to be considered dangerous. Even the loveliest mountain stream may have been contaminated by previous camping parties, and a spring may drain a privy farther up the mountain. In country fought over as have been Belgium and northern France, underground water courses are certain to be polluted.

The only safe course is to sterilize it. On the march water may be furnished by inhabitants of towns along the line of march. This also must be sterilized before issue.

Men are not permitted to leave ranks for drinks nor to replenish canteens except by order, and not by straggling.

408. Halts. In prolonged marches at least one day in seven should be a day of rest. In ordinary daily marches the first halt is made after marching about three-quarters of an hour, and is about 15 minutes long. After that, foot troops halt about ten minutes every hour—that is, they march 50 minutes and then halt 10. For cavalry the hourly halts are shorter—5 minutes. For artillery the hourly halts

are from 5 to 10 minutes. In very hot weather the halts may be longer and more frequent.

409. Sanitary reasons for halts. Halts are made for rest and refreshment, procurement of drinking water, evacuation of bowels and bladder, caring for the feet and inspection of the general condition of the command. Opportunity is taken to care for the animals and readjust equipment.

410. The choice of the halting place. This should always be made with above reasons in view, therefore, it should not be made in a village or place where the objects of the halt would be defeated. To enable the men to attend to the calls of nature, and to adjust their clothing, etc., the men are allowed to fall out, but remain in the immediate vicinity of their places.

411. Sanitation of halting places. Care must be exercised especially when troops are in long columns, that the ground is not polluted when the column halts since it will be the resting place of succeeding bodies of troops. Shallow straddle trenches should be used or holes made by post hole augurs (carried for the purpose) are adequate and entail slight labor.

412. Long halts. As a rule troops prefer to finish a day's march as soon as possible. In good weather, with favorable temperature, long halts are not desirable on marches of less than 15 miles for infantry or 25 miles for cavalry. When the day's march will run well into the afternoon, a halt of about one hour near meal time is advantageous. Places for long halts should be selected with care; wood, water, grass, dry ground, and shade are desirable features. Arms are stacked and equipments removed; mounted troops dismount.

413. The close of the march. The close of the march should find the men in camp before darkness in order to allow of making proper arrangements for the night. No matter what the hour, however, latrines must be dug, at once, and if at night, marked by lanterns, to prevent pollution of camp.

Company commanders must personally see that their men wash their feet as soon as possible after reaching camp, prick and evacuate blisters, and cover such blister or excoriations with zinc oxide plaster applied hot, and dust the feet with foot powder and put on their socks. (Adhesive tape and foot powder are supplied to companies by the medical department [surgeon] and issued by squad leaders.)

Undue amount of foot injury and disability from shoes will be regarded as inefficiency on the part of the officers concerned and as cause for investigation.

SANITATION OF CAMPS

414. Varieties of camps. When not in garrison or post, troops may temporarily occupy bivouacs, tents, cantonments, or billets.

415. Bivouacs. When troops rest on the ground without shelter they are said to be in bivouac. Since the adoption of the shelter tent, however, troops use them for bivouac. In the artillery, on marches from day to day the men may be permitted to sleep under carriages or

paulins covering the harness, thus obviating the necessity of pitching tents.

416. Selection of bivouacs. The general principles governing the selection of sites apply to bivouacs. The ground should be dry and protected against sun and wind. Light woods are nearly always good sites for infantry bivouacs, on account of the shelter and material available.

417. Sanitation during bivouac. From the tactical point of view, bivouacs are very convenient, but for sanitary reasons they are resorted to, as a rule, only when necessary because, to maintain the efficiency of a command, the troops must have adequate shelter which is not afforded by bivouacs.

418. Men should not lie on damp ground. They should use boughs, straw, leaves, poncho, slicker, or blanket, to raise them from the ground. Newspaper placed inside of coats and shoes makes a good non-conductor of heat, and in cold weather straw may be tied around the feet. A hole may be dug into which are put the stones heated in the fire, or a bucket filled with hot stones is turned upside down in a small hole (and tamped with earth to keep in the heat) to make a foot warmer. Hay stacks may be used and shelters of brush or branches to keep off wind or snow.

419. Camps. When troops are under canvas they are said to be in camp. The senior medical officer on duty with the troops or especially assigned during the period of selection and construction, acts as expert sanitary adviser in which capacity he makes inspections and investigations, renders reports and what is most important, he recommends measures to correct sanitary faults or obviate them.

420. Form of sanitary recommendations. Sanitary recommendations should always be submitted in a form susceptible of being adopted as an order; they must therefore prevent or correct some fault, to be of value. Vague generalizations and misty suggestions only lead to confusion.

421. Classes of sanitary recommendations. Sanitary recommendations comprise two distinct phases of sanitation. One calls for labor, materials, appliances, supplies, and conveniences of a sanitary nature for the use of the troops while in camp; the other deals strictly with the sanitary conduct of troops in camp and the responsibilities of the various grades in maintaining discipline and obedience to sanitary regulations.

When troops have to supply themselves with sanitary expedients in the field, both phases may be included in one order. Where, however, troops occupy camps prepared in advance, the recommendations as to supplies, etc., have already been made to the camp commander, the commander of the troops will have to publish only the sanitary regulations for the conduct of the troops while occupying the camp.

422. Method of selection of temporary camp sites. When practicable, large commands are encamped by brigades. The camping ground may be selected by the supreme commander, but in large commands is generally chosen by a staff officer sent forward for that pur-

pose. This officer, with a representative from each brigade and regiment and a medical officer, precedes the command, selects the camping ground, assigns sections thereof to the larger fractions of the command, and causes them to be conducted to their respective sections on arrival.

423. Form and dimensions of temporary camp sites. The form of the camp should be such as to facilitate the prompt encampment of troops after a march and their prompt departure when camp is broken. It will depend upon the tactical situation and the amount and nature of ground available. In one-night halts in the presence of the enemy, camps must of necessity be contracted. In other cases, where a more extended halt is contemplated and tactical reasons permit, better camp sanitation may be secured, and a more comfortable arrangement made by the expansion of camp areas. Appendix 1 (p. 172) F. S. R., gives the general forms, dimensions, and interior arrangements of camps of troops and trains. It also shows and explains the contracted camping areas.

424. Sanitary reasons for selecting the camp site. There is often little choice in the selection of camp sites in war. Troops may have to camp many nights on objectionable ground. Nevertheless, sanitary considerations are given all the weight possible consistent with the tactical requirements.

1. The ground should accommodate the command with as little crowding as possible, be easily drained, and have no stagnant water within 300 yards.

2. The water supply should be sufficient, pure, and accessible.

3. There should be good roads to the camp and good interior communication.

4. Wood, grass, forage, and supplies must be at hand or obtainable.

5. Closely cropped turf with sandy or gravelly subsoil is best; high banks of rivers are suitable, provided no marshes are near.

6. In hot summer months, the ground selected should be high, free from underbrush, and shaded with trees if possible.

7. In cold weather, ground sloping to the south, with woods to break the north winds, is desirable.

8. Old camp grounds and the vicinity of cemeteries are undesirable. Marshy ground and stagnant water are objectionable on account of the damp atmosphere and the annoyance and infection from mosquitoes. Ground near the foot of a hill range generally has a damp subsoil and remains muddy for a long time. Thick forests, dense vegetation, made ground, alluvial soil, punchbowl depression, inclosed ravines, and dry beds of streams are unfavorable.

9. Camp sites should be selected so that troops of one unit need not pass through the camp grounds of another.

10. As a protection against epidemics, temporary camp sites in the theater of operations should be changed every two or three weeks. Troops should not camp nearer to native dwellings in the tropics than 500 yards, owing to malarial mosquitoes.

425. Sanitary regulations for temporary camps. These are usually included in the halt order which designates the place of encampment. It includes the following matters:—

1. The place for obtaining drinking and cooking water, for watering animals, for bathing, and for washing clothing, in the order named, from upstream down. When bathing places do not exist owing to the absence of suitable streams or other bodies of water, bath tents must be erected. On the arrival of the troops, guards are posted to enforce proper use of the water supply. When several commands are encamped along the same stream this matter is regulated by the senior officer. If the stream is small, the water supply may be increased by building dams. Small springs may be dug out and lined with stone, brick, or empty barrels. Surface drainage is kept off by a curb of clay. Sterilized water is provided, by means of the water bag, filled, sterilizing with each organization, when there is doubt as to the purity of the water, or it is boiled 20 minutes, then cooled and aerated. Data for the above are obtained by the medical officer and other staff officer who selected the site.

2. Kitchens are established and details made to procure fuel, water, forage, etc., and to prepare latrines and kitchen pits; if necessary, tents, company street and picket lines are ditched. Latrines for the men are always located on the opposite side of the camp from the kitchens, generally one for each company unit, and one for the officers of a battalion or squadron. They are so placed that the drainage or overflow cannot pollute the water supply or camp grounds. When the camp is for one night only, straddle trenches suffice. In camps of longer duration and when it is not possible to provide latrine boxes, as for permanent camps, deeper trenches should be dug. These may be used as straddle trenches or a seat improvised. When open trenches are used the excrement must be kept covered at all times with a layer of earth. Old trash is to be burned or buried in the kitchen fire-pit, and no remains of food are allowed to litter up the ground.

426. The water supply. Approximate daily requirements.

1 gallon per man on march.

5 gallons per man in camp.

6 to 10 gallons per animal on march and camp.

The above figures apply to water taken from streams, where animals are watered at the streams, and cooking water carried. In estimating the daily supply for permanent or semipermanent camps, where water is piped to kitchens, bath house, etc., the requirements will be 25 to 30 gallons per man and 10 to 15 gallons per animal, depending on climatic conditions.

Havard, page 245, Military Hygiene, says daily ordinary needs in gallons per man are "drinking 1, cooking 2, ablutions 2, laundry 8, water closet 6, shower bath 5, total 24," but "when strict economy is necessary 12 gallons may suffice."

The additional call for water made by civilized communities makes an estimate of "never less than 100 gallons" and in reckoning the capacity of water works sanitary engineers estimate a "minimum out-

put of 150 gallons per capita daily." "In garrisons 75 gallons is ample for foot, and 150 gallons for mounted, troops."

427. Estimating quantity of water in stream. $B \times D \times V \times 10800$ = gallons in 24 hours. B = average width, D = average depth, V = average velocity (all in feet). To get average velocity get the surface velocity from a floating chip and multiply by $4/5$.

(a) *Estimating yield of a well.* Mark the level of water in the well. Pump out rapidly a measured amount. Note the time for water level to reach former level. Divide 24 hours by the time of refilling and multiply by the quantity of water drawn, to get 24 hr. yield.

428. The source. Coming first as rain water, it is collected in cisterns or pools (water holes) and as ground water it appears in springs, dug wells and artesian wells, or as rivers and lakes; it may be piped to reservoirs, and so distributed through water mains of towns and cities.

The quality of the water must be tested for contamination and impurities. Samples may be sent to the laboratory established by the Surgeon General at the camp or at the department laboratory or a field laboratory in a motor truck.

429. Data for water examination. Advise the officer to whom it is sent of the following particulars: (1) the date, place, and mode of shipment; (2) the date and place of the collection of the water; (3) the character of the watershed, its topography, and the uses to which the country is put if inhabited; (4) the proximity of fertilized land to such place or source, and whether the said land is higher or lower than the adjacent land; and (6) such other information as may suggest a possible deleterious influence on the purity of the water. If the water is from a well the latter should report the depth of the well, the strata found in digging or boring it, and the depth of the water in the well.

1. *Method of collecting samples:* The specimens should, when practicable, be collected by a medical officer. If the water to be examined is delivered through pipes or is pumped from a well or cistern, the local supply pipe and all pump connections should be emptied by allowing the water to run for 15 minutes before taking the samples.

2. *Water for bacteriological examinations.* Samples of water for bacteriological examinations should be collected in bottles furnished for the purpose. Each bottle is sterilized before leaving the laboratory, and the glass stopper is protected by a piece of heavy sterilized muslin securely wired to the neck of the bottle. The stopper should not be removed until immediately before the bottle is filled.

(a) In taking specimens from a faucet or pump (after emptying the supply pipes and connections) a small, gentle stream should be allowed to flow, the stopper taken out, the bottle grasped near the bottom, held in an upright position, and the stream permitted to flow into the bottle until it is filled to the shoulder. The stopper should then be replaced; both it and the cloth should be secured by carrying the wire several times around the neck of the bottle and twisting the ends tight. The stopper must be handled only by the square cloth-

covered top. The lip of the bottle must not be brought in contact with the faucet or spout, nor should the neck of the bottle or naked part of the stopper be permitted to come in contact with any object during the manipulation. The projecting flange is designed to protect the plug of the stopper, which it will do if the stopper, after withdrawal, is held by the top in a vertical position. The stopper should not be laid down and the cloth should not be handled by the fingers except in the act of securing the wire about it. When well water is to be examined the bottle should be filled directly from the bucket constantly in use for drawing the water, and from no other vessel.

(b) On account of the labor involved and the possibility of error, bacteriological examination of water collected in any other than the prescribed receptacles will not be made.

(c) Each package should be plainly marked to show the source from which the sample is taken and the date of collection.

(d) The case should be marked "Water for bacteriological examination," and it should be forwarded by mail at the earliest moment.

3. *Water for chemical examination.* The quantity of water forwarded for chemical examination should be not less than 3 liters. The receptacles for transporting it should be chemically clean, and all vessels used in its collection should be as clean as it is possible to make them.

(a) Glass stoppered bottles of suitable size are best adapted for the preservation of a sample of water in its original condition. In pouring the water into bottles it should not come in contact with the hands of the operator or with anything not essential to the operation. Bottles should be filled to within an inch of the stoppers; the stoppers should be carefully rinsed and inserted and secured with a canvas cover tied tightly around the neck of the bottle. Sealing wax or similar material should not be used to secure the stoppers.

(b) If no proper receptacles are obtainable suitable bottles may be obtained upon application to the officer to whom the specimens are to be sent for analysis. Bottles so obtained should when filled be re-packed in the box in which they came, reversing the cover, which should have the laboratory address thereon. The package should be tagged or labeled to show the place and date of collection.

4. *Method of shipping.* Water for chemical analysis should be shipped, immediately after its collection, by express. A Medical Department bill of lading will be made for each such shipment and the carrier's signature taken thereto upon turning over the package for transportation.

Until a special form shall have been provided therefor Form 153, Q. M. C., may be adapted to the purpose by altering the symbol W. Q. in the upper right-hand corner to read "W. Medical," followed by the number of the bill. The consignor should in every case fill out the instructions for billing at the foot of the bill of lading, specifying therein that the freight charges are to be charged to the Surgeon General, Washington, D. C., and should immediately mail the bill to the consignee, who will upon receipt of the articles accomplish the

bill and surrender it to the carrier. The consignor should at the time of shipment furnish the carrier with a shipping order (Form 156, Q. M. C.) and mail a memorandum of the bill of lading (Form 154, Q. M. C.) to the Surgeon General, with information as to the purpose of the shipment unless the same is clearly revealed by entries on the bill.

5. *Report of examination of water.* Upon completion of an examination of water (chemical or bacteriological) the officer making it will report the results thereof to the officer who asked for it, and will at the same time furnish a copy of such report direct to the Surgeon General, with a copy of the letter called for by paragraph 356, Manual of the Medical Dept.

430. **When water is safe to drink.** When the water supply is safe to drink signs should be placed stating that fact. In the absence of signs all water for drinking should be sterilized.

431. **Sanitary squads.** A sanitary force for general use in looking after the sanitary equipment and utilities is obtained by means of sanitary squads.

(a) *Composition.* Medical officers and enlisted men of medical department and other enlisted men detailed for the duty, and civilian laborers hired by the Q. M. C. are organized into sanitary squads by the Division Surgeon or Surgeon of command, and placed under the direction of the sanitary inspector.

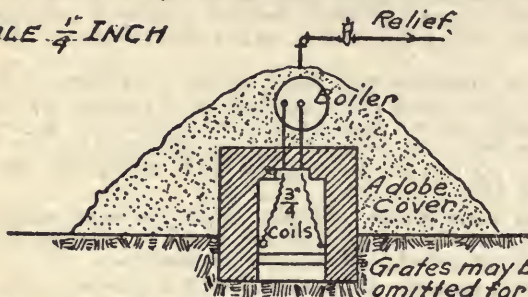
(b) *Duties.* Sanitary squads exercise supervision over and execute sanitary measures in camps, or in civil communities under military control not otherwise provided for, or which cannot be done by individual organizations. They operate sanitary apparatus, used by a number of bodies of troops in common such as scavenger service, incinerators, etc. They will not be used to relieve regimental detachments or the sanitary personnel in sanitation of their own camps.

432. **Depots for receipt and storage of supplies.** It is especially important that adequate storage facilities be provided for perishable articles of the ration and that a system of rapid distribution be inaugurated before troops arrive. The use of specially designed meat trucks and others set aside for exclusive purpose of food transportation is imperative, that food may be handled in a cleanly way and be protected from the sun, rain, dust and flies.

433. **Baths, laundries and disinfection.** In the field we are forced to the creation of sanitary expedients to replace the conveniences of garrison life. In campaign, where troops are for long periods, without opportunities for bathing either due to extensive movements or to trench warfare, their clothing becomes a mass of ragged filth, in which reside insect parasites and bacteria, causes of typhus, plague, tetanus, gas gangrene, malignant oedema, and other septic inflammations. It is essential therefore that every opportunity for adequate bathing facilities be secured and that there shall be in conjunction therewith a means of washing and disinfecting clothing, of issuing fresh clothing, especially underwear, and a barber. The barber should be under the charge of the medical officer in charge of the disinfection, and all

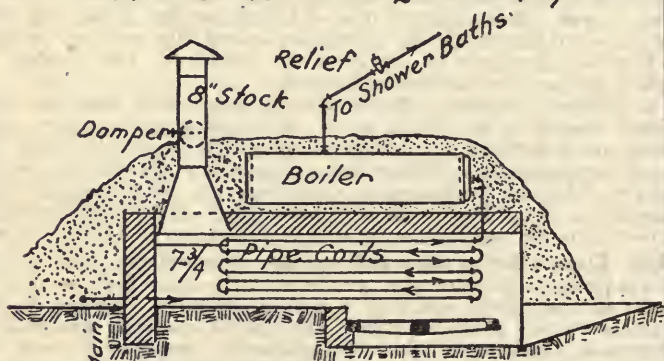
HEATER CONSTRUCTED WITH STANDARD
CAMP INCINERATOR, 30 GAL. BOILER
AND WITH $\frac{3}{4}$ " GAL'D. PIPE & FITTINGS.

SCALE $\frac{1}{4}$ " INCH



TRANSVERSE SECTION AT GRATE.

GRATE BARS $3'6'' \times 2\frac{1}{2}''$ CENTER OPENINGS



LONGITUDINAL SECTION

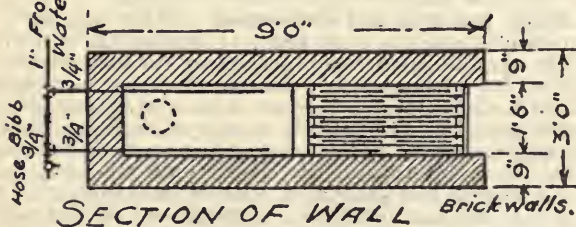


FIG. 2—SAVELLE WATER HEATER

baths should supply hot water. Where regular boilers are not attainable the Saville water heater, Figure 2, may be improvised.

(a) **The Goode-Hughes combined bath and disinfection plant** (Fig. 6) is an excellent example of a plant for serving large bodies of troops. It works as follows: Groups of men report at intervals of 30 minutes. They are just required to urinate before entering the baths. They remove shoes, leggins and blouses. They then enter the undressing room in batches of 32, and place the remainder of their clothing in the numbered compartments and their breeches are handed into the ironing room to have the lice and nits killed by ironing. In groups of 16 they enter the bath and are allowed 3 minutes under the hot shower, using soap and hand scrubs. They then enter the dressing room, dry off and receive clean underclothing, repaired or new, and socks. Their other clothing, shirts, pants, and blouses, has been put through a disinfecter.

Soiled underclothing is sorted, rags destroyed, torn garments repaired and after disinfection are laundered by hand in a neighboring laundry.

434. Disinfection. Disinfection is obtained by inspection of clothing and use of boiling water, hot irons, kerosene, benzine, or live steam and the use of a louse powder. (Naphthaline, 96 parts, Creosote, 2 parts, Iodoform, 2 parts.) In case troops are sent into a typhus area, a railway disinfecting and bathing train will be provided and stationary plants, of like character at the bases. A portable disinfecter for

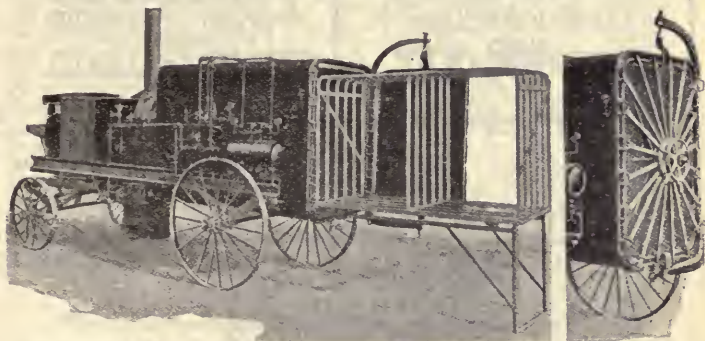
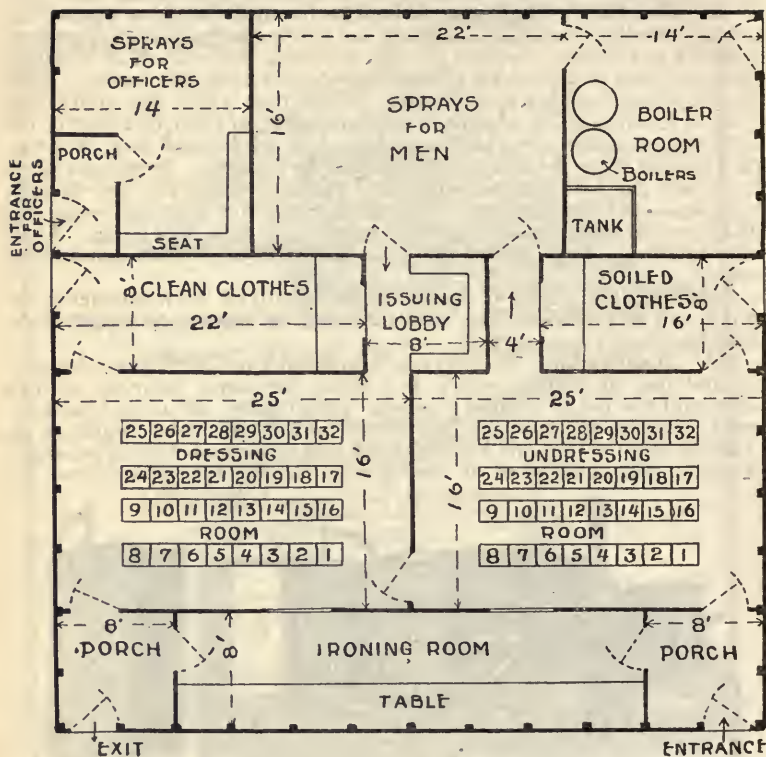


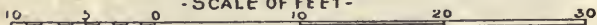
FIG. 3

sterilizing (Figure 3) is capable of sterilizing 50 uniforms and kits in 40 minutes. Either steam or formaldehyde and ammonia are employed as germicides. The outfit consists of a 5-hp. upright steam boiler and an air tight chamber, 6 ft. long, mounted on a metal running gear. The rear end of the chamber is provided with a heavy door which can be hermetically sealed. Within is a rack mounted on wheels from which clothing can be hung, while small articles can



~ GROUND PLAN ~

- SCALE OF FEET -



THE GOODE-HUGHES TYPE OF COMBINED PLANT FOR BATHING AND DISINFECTING CLOTHING; FOR A DIVISION. CAPACITY- 2000 MEN, DAILY.

FIG. 4

▲ GREASE TRAP & INVISIBLE SINK FOR DISPOSAL OF KITCHEN SLOPS ▲

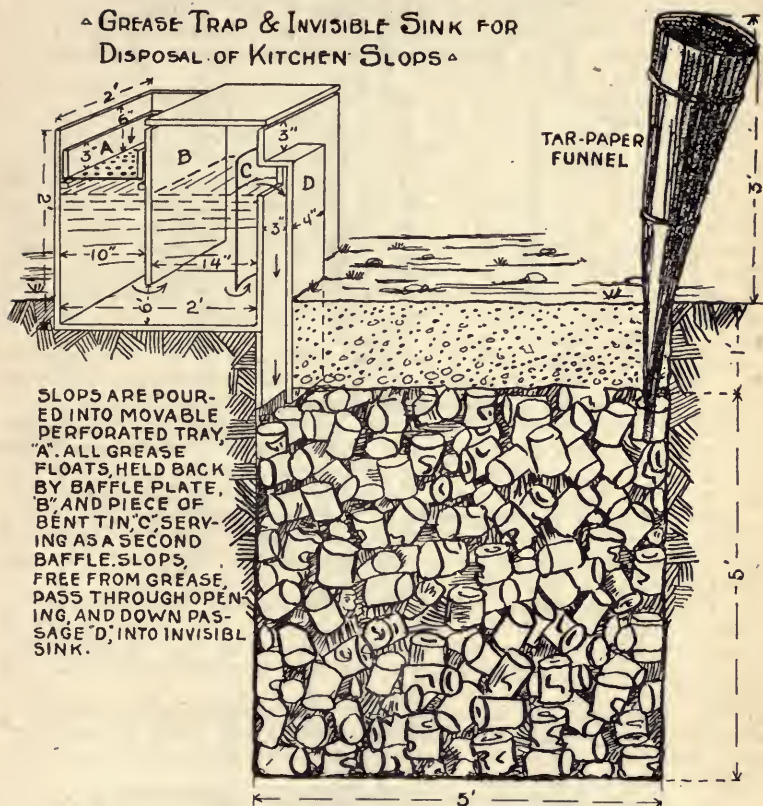


FIG. 5

be placed on an iron grating. After the chamber has been filled with dry steam from the boiler for the proper length of time, the garments are dried by a current of sterilized air and then ready to be removed. Fastened to the side of the disinfecting chamber is a two-compartment tank from which formaldehyde and ammonia gas can be discharged into the inclosure when steam treatment is not desirable.

An infected building should be fumigated before occupancy, by burning sulphur $4\frac{1}{2}$ lbs to 1000 cubic feet of air space. Fumes to remain in contact for 12 hours.

435. Laundries. Steam laundries are needed wherever there is an opportune place for a bath for large numbers of men near billets or cantonments, and at advance base hospitals, with convalescent camps, and general hospitals at the base. They should be of sufficient size to more than serve the estimated maximum of men cared for. They should have special departments for receiving and boiling clothing, which needs disinfection, in order that it may be disinfected. They should have a clothing dépôt of the Q. M. Corps attached for issue of new garments to replace ragged ones. They should have a repair department for putting on patches and buttons and sewing up rents, finally they should cleanse all rags and turn them over for disposal by the quartermaster corps.

436. Wash stands. These are very necessary in any semi-permanent camp, and should consist of a table on which to set basins, a trough to carry off the rinsings and soapy water and a method of supply of fresh water. The wash stands should be immediately in the path between company camps and the latrine, for use after using the latrine, or a wash stand may be put in one corner of the latrine. A sign in the latrine should read "NOW WASH YOUR HANDS."

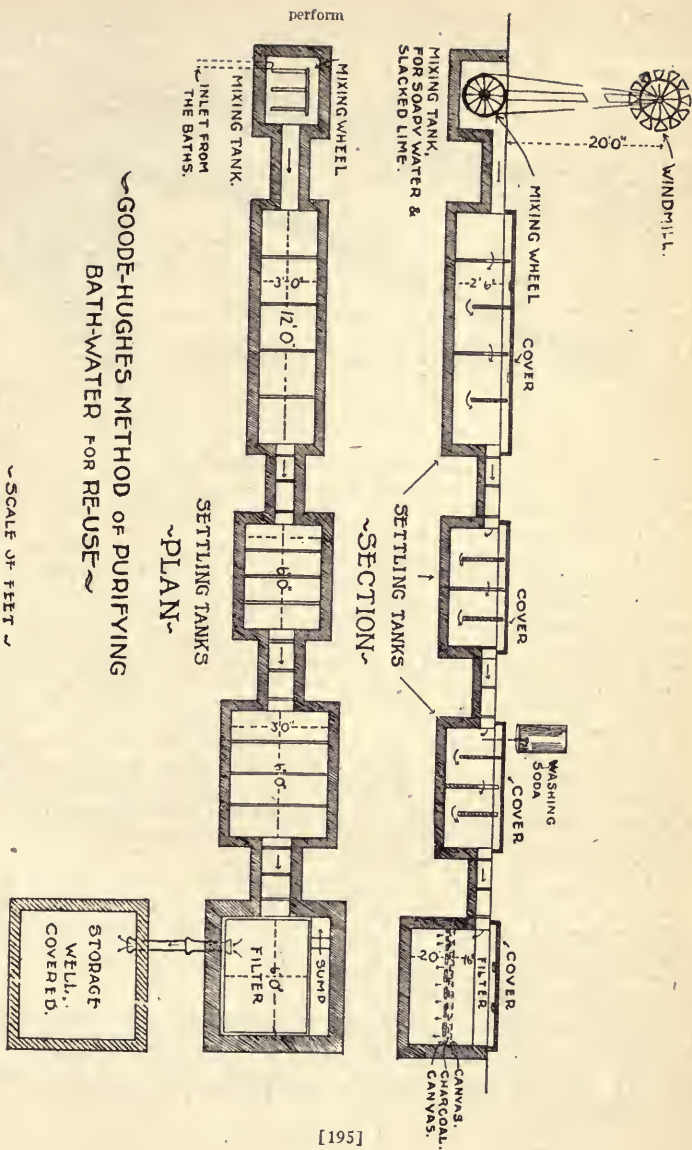
437. Disposal of slop water. Where sewerage connection is not to be had; two conditions modify our method: Where the soil is absorptive and when the soil is impermeable, the object in either case being to get a non-offensive effluent.

(a) *When the soil is permeable*, we resort to an improvised grease trap connected with an invisible sink, or soakage pit. The grease trap is indispensable as soapy water tends to coat and clog the interstices of the sink with a greasy scum which soon becomes impervious and malodorous.

(b) *When the soil is not permeable.* A very ingenious method of clarifying soapy water from baths so that it may even be used over again has been devised by Doctors Goode and Hughes of the British Military Medical Service.

438. Sanitation of kitchens and mess rooms, and the restaurants of post exchanges. The plans of the building are prepared by the Quartermaster Corps.

G. O. 45, 1916, says they must be securely screened and provided with an efficient fly trap. One teaspoonful of formaldehyde in a saucer of water is a good fly poison. Where running water and sewer connection are provided, a good sink is absolutely necessary in the kitchen. When not provided, water and slops will be disposed of in the invisible sink or in the incinerator, and arrangements must be



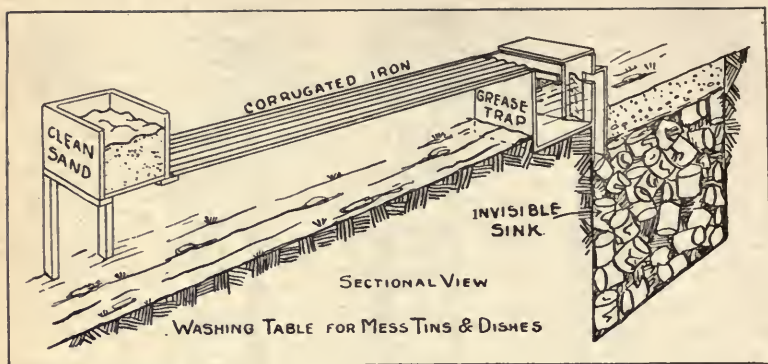


FIG. 7

made for scavenger service to remove ashes, cans and rubbish to the camp dump. Provision must be made for washing mess kits of the men. A working table is very convenient; Fig. 7 shows such a table with a grease trap and invisible sink.

Every kitchen must have its incinerator which may be of the Straube type, or the more elaborate and more highly efficient modification called the Guthrie incinerator. The efficiency of both depends upon heating, to high temperature, the lining walls before putting in anything to be destroyed. If this precaution be remembered, even liquids may be disposed of by pouring down the side of the pit. In the Guthrie incinerator, the pans are used for evaporating liquids and the garbage becomes a fuel. No well regulated kitchen should have much garbage.

Empty cans should have a hole cut in the bottom to prevent acting as mosquito aquariums and be mashed flat, they should then be put into the incinerator to be freed of all organic contents and then put with the ashes in the ash can. When scavenger service is not employed, the cans may be utilized in making the invisible sinks or be simply buried in a kitchen pit.

439. Care of food. Refrigerators and ice boxes will be installed, and ice delivered by the Q. M. Corps. Vegetables should be kept off the ground; flour, sugar and similar articles should be kept away from moisture, in cans or boxes. Tainted food should be submitted at once to a medical officer who will inspect and decide whether the food is fit for human consumption.

440. Prevention of food poisoning or infection. The elimination of the following foods from the messes will serve to prevent a variety of intestinal disorders;

(a) Canned milk and fish opened the day before. (Fish and milk poisoning.)

(b) Hashes of meats and potatoes prepared the night previous. (Ptomaine poisoning of severe type.)

(c) Locally grown green vegetables, uncooked. (Dysenteries and diarrhea.)

No foods should be sold in camp except at the authorized Post Exchange, nor purchased for consumption by the troops unless the source of the food is known to be safe. This requires individual care by medical officers to inspect sources of food supply.

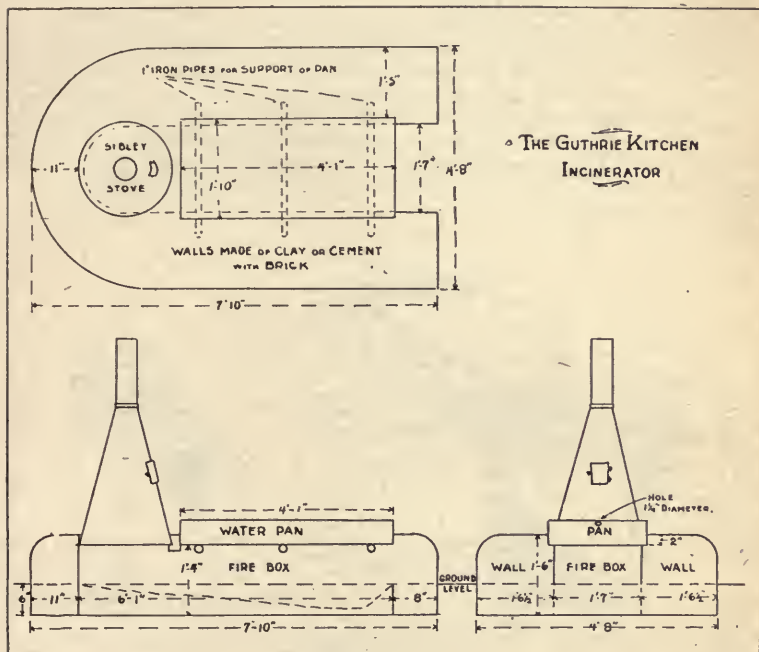


FIG. 8

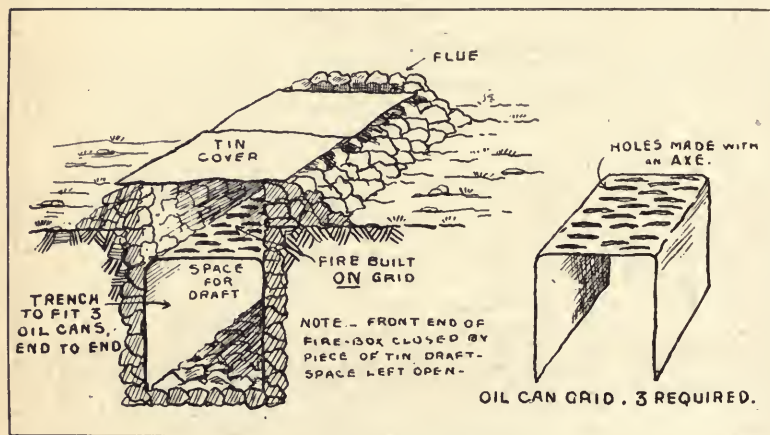
441. The Straub Incinerator. If wood is plentiful and medium-sized stones can be obtained, both liquid and solid refuse can be disposed of by using incinerators improvised for each company as follows:

A pit is dug 5 feet long, $2\frac{1}{2}$ feet wide, and 6 inches deep at one end and 12 inches at the other; the excavated earth is banked around the pit and the latter is then filled with stones on which a fire is built; when the stones have become heated, liquid refuse is poured into

the pit (shallow end), where it gradually evaporates; solid matter is burned on the fire.

A type of incinerator having a fire bed of rock 1 foot deep will not permit the heat from the fire to penetrate beyond that depth. The rock wall on three sides of the fire bed absorbs much heat that otherwise might be dissipated into space, which increases the evaporating capacity of the incinerator enormously, and requires a comparatively very small amount of fuel. Incinerators built of large rocks are considered to be most efficient.

About one-sixth of a cord of wood per day per company is considered more than sufficient for the destruction of all slops and garbage if ordinary care and attention are given the incinerator. Liquid slops should be evaporated by being poured slowly along the vertical walls of the incinerator, not upon the fire bed, and the solid garbage should be placed on top of the fuel. It has been determined that a skilled attendant can destroy 100 gallons of liquids and 23 cubic feet of solid garbage in about 12 hours by using one-sixth of a cord of wood.



HASTY INCINERATOR

FIG. 9

Where rock is not available, material (brick 340, lime three-fourths bag) will be obtained on requisition from the quartermaster.

442. The sanitary garbage can. When it is closed, it is fly proof. The feature of the can is the movable bottom, which can be pulled out when the can is to be emptied, allowing the contents to fall into a carrying container. Where disposal in a sanitary way can be made by means of carts, the garbage can may be used. It is especially desirable for use in cities during riot, flood, fire or other duty. The cans will be

thoroughly cleaned, scalded, and coated with crude petroleum after emptying.

443. SUMMARY OF DATA FOR DISPOSAL OF ORGANIC WASTES FOR THE CAMP

1. Disposal of garbage—(a) Arrangement made with civilians to haul away daily, or daily scavenger service by civilian contractor or sanitary squads. (This is not satisfactory usually.) (b) Incineration—preparation of kitchen incinerators of the Straub or Guthrie type, supply of wood. (c) Camp incinerator—rock pit type, one to a brigade—wood and oil for fuel required.
2. Disposal of Excreta—(a) If by latrine—digging latrines, working Havard boxes—supply of straw and mineral oil for daily burning—lamp black and crude oil for coating walls of latrine. *Whitewash is taboo.* Wash stands must be placed in each latrine and signs placed "Wash hands here." (b) If by Kentucky sanitary privy—supplies of labor, cement, drain pipe and lumber for their construction. Size depends upon area available, and whether company or battalion size. (c) If by pit and odorless excavator, which is the least desirable, then supply of lining for pits, and odorless excavator carts—scavenger gang. (d) If by sewerage system (water carriage), fixtures, automatic flush or trough system will be installed.
3. Disposal of trash—Requires no special apparatus—organic is burned in kitchen incinerator, inorganic as empty cans, etc., is buried, or a special dump requires scavenger wagons and animals.
4. Disposal of manure—Sanitary picket lines and stables, wagons for hauling, rock pile incinerators and manure burners.

444. **Latrines.** In more permanent camps the trenches are suitably screened. Seats with lids are provided and covered to the ground to keep flies from reaching the deposits; urinal troughs discharging into the trenches are provided. Each day the latrine boxes are thoroughly cleaned, outside by scrubbing and inside by applying when necessary a coat of oil and lamp black. The pit is burned out daily with ap-

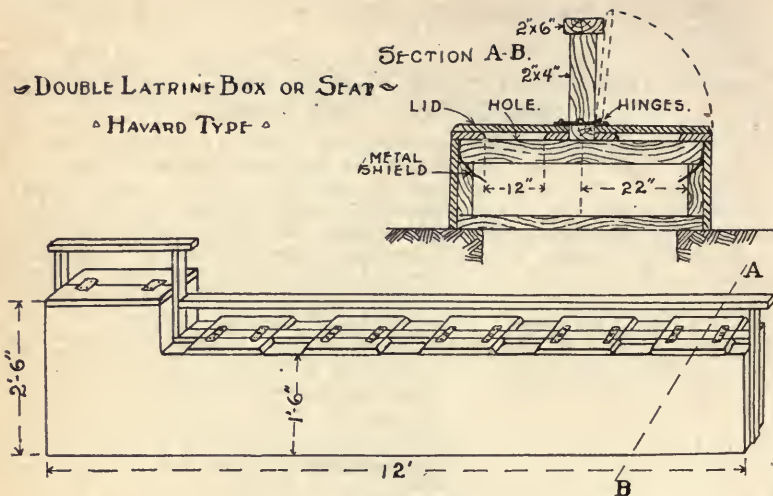


FIG. 10

proximately 1 gallon oil and 15 pounds straw. When filled to within two feet of the surface, such latrines are discarded, filled with earth, and their position marked. All latrines and kitchen pits are filled in before the march is resumed. In permanent camps and cantonments, urine tubs are placed in the company streets at night and emptied after reveille.

445. The rock pile incinerator. This is a most efficient method of disposal of all sorts of organic wastes.

(a) *Specifications.* A circular pit 15 feet in diameter and 3 feet deep is lined with large rocks, boulders (or mashed tin cans). In the center a pyramid of stones is raised four or five feet high—this is to create a draught, while the circumference of the pit is raised one foot above the surrounding ground level by large boulders to direct the drainage away from the pit—water flowing in would extinguish the fire—and also to act as a bumper to the wheels of the cart or excavator.

(b) *Operation.* One cord of wood will consume about 4,500 pounds of refuse, garbage, excreta, butcher slops, dead animals, and manure, after the stones are heated. One attendant can run it. All materials for incineration must be put into the pit and spilled around it.

FLY PREVENTION

446. This is possible provided the source of fly breeding is within military control. It depends solely on manure disposal, of which we present here seven methods:

1. *Incineration.* During dry weather five men can burn the daily accumulation from about 3,000 animals, providing the manure is properly dumped from the tail of the wagons in narrow windrows about eight feet apart. After drying for a few hours each windrow is spotted with oil at intervals of six feet on the windward side and fired. The next day the wagons straddle the same windrows and dump the manure on the hot, smouldering ashes of the previous day's burning. In order to prevent burning of the feet of the wagon animals it is necessary to keep the windrows raked from each side so that they do not exceed two and one-half feet in width. Tin cans, bottles, scrap lumber, etc., should not be received at the manure dump on account of the danger to the feet of the animals. Waste paper should be burned in the kitchen incinerators or in wire cages constructed in camp for the purpose. If brought to the manure dump it is liable to be carried away by the wind before it can be burned. When the manure comes to the dump wet, the wagons are required to drive between the windrows and their loads are spread in a thin layer between the old windrows. When dry the manure is raked onto the windrows and fired as usual. Windrows

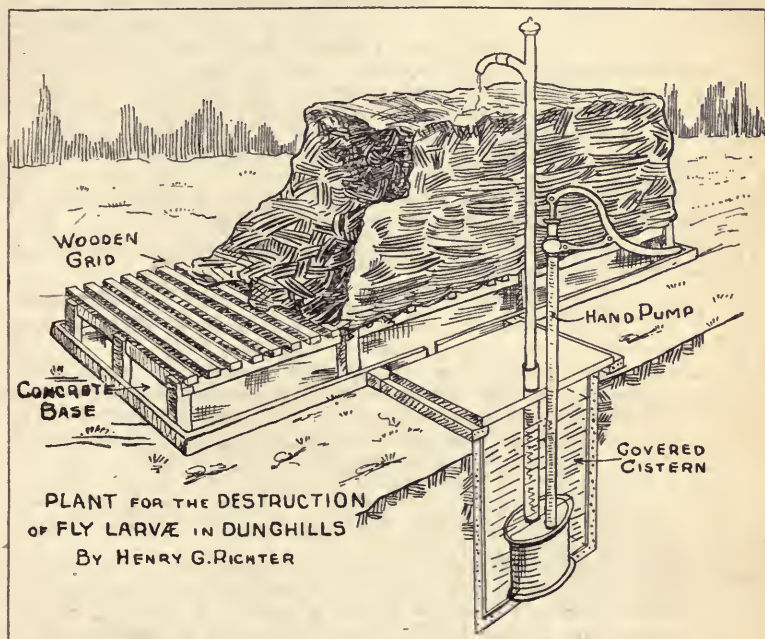


FIG. II

[201]

that become wet before they are burned have to be spread. During wet periods much additional labor becomes necessary, therefore the rock pile incinerator is preferable although requiring some wood for fuel. In wet manure an abundance of fly larvae is always found within four days after the manure leaves the picket lines, but it is probable that none escapes if the manure is burned within ten days. In the tropics where it is impossible to dry manure during the rainy season it is cremated in an incinerator made of railroad rails built to form an oblong basket, and covered by a galvanized iron roof.

2. *The Maggot Trap.* (H. G. Richter) When awaiting the periodical visit of the farmer the manure should be placed on a slatted platform, on the floor of a concrete basin containing $\frac{1}{2}$ inch or more of water; the larvae in migrating will drop into the water and be drowned, as the maggots tend to migrate, crawling away from the manure (especially moist manure) in search of comparatively dry and safe places wherein to pass the pupal or resting stage. Each day the stable cleanings should be placed on the platform, compactly heaped and well moistened by having a small cistern close to the platform and a pump so placed that the watering of the heap is readily accomplished. If the liquid manure from the stable is conducted by drain to the cistern, the valuable plant food which it contains will then be added to the manure on the maggot trap. Such a trap will destroy 99% of the maggots developed in the manure. After the manure has been standing on the trap ten days it will be practically maggot-free and can then be used on fields or in gardens, or stored in heaps without likelihood of further fly-breeding in it. This method is not desirable.

3. *Burial.* The amount of labor and the excavation necessary makes this method prohibitive for large camps.

4. *Storage in fly proof bins or pits until hauled away.* This is not desirable in military service.

5. *Storage in pits or barrels submerged in water.* This will answer only for very small amounts intended to be used as fertilizer.

6. *Chemical treatment (to poison the maggots).*

(a) *Powdered hellebore.* The hellebore is added to water at the rate of $\frac{1}{2}$ pound per ten gallons; after stirring, this mixture is allowed to stand 24 hours, when it is applied to the manure at the rate of 10 gallons for every eight bushels (about 10 cubic feet). Applied thus hellebore kills from 85 to 98 per cent of the larvae, does not alter the composition of the manure, nor hinder the normal activity of the bacteria, and has no injurious effect on plants when the manure is treated in this way and added to the soil.

(b) *Powdered borax.* This is a good treatment in combination with the maggot trap in small posts, but not available for large camps. Powdered borax is applied in solution at the rate of one pound dissolved in not over 12 gallons of water, to every 12 bushels (15 cubic feet) of manure; and will destroy from 90 to 99 per cent of the maggots. Great care

must be used in treating manure with this substance, because large applications to the soil are likely to injure plants. Ordinary crops will not be injured when the manure is treated at the rate of not more than one pound per 16 cubic feet, and when not more than 15 tons of manure thus treated are applied to the acre.

(c) *Relative value.* Borax can be used freely on all breeding material, such as refuse piles and privies; but hellebore is perhaps safer for treating manure, while borax is better for the treatment of stable floors and the like, because hellebore decomposes after 25 or 30 days.

(d) *Daily volume of manure.* The manure produced by one horse per day amounts to from one and one half to two bushels. It would therefore require for the treatment of horse droppings between one to two gallons of the stock solution of either borax or hellebore. It should cost six to eight cents per day per animal for borax treatment, and nine to twelve cents the day for the hellebore treatment.

(7) *Biothermic method (M. E. Roubaud).* This method is one whereby the heat in the manure which incubates the eggs is employed to kill the larvae.

The manure is placed in heaps about five bushels to the heap. The fresh heap is then covered to a depth of eight inches with about eight times the bulk of actively fermenting manure, allowed to stand for five hours, by the end of which period all of the larvae will be killed.

(a) *Explanation of biothermic method.* Flies lay eggs in fresh manure only and in manure which is damp (with urine or water). Flies will not lay eggs in fermenting manure or dry manure. Eggs laid in fresh manure hatch in twenty four hours and the larvae migrate away from the hot center of the pile (which may rise to 194° Fhr. [90° C]) to the cooler outer layers, because contact with heat of fermentation kills them. The larvae of the domestic fly exposed to heat of 122° Fhr. (50° C) will die in three minutes. In contact with the gases of fermentation it dies in one minute at 123.8° Fhr. (50° C), in five to seven seconds at 138.2° (59° C) and four to five seconds at 140° Fhr. (60° C).

8. Fly traps, sticky fly paper and formaldehyde must all be used when the source of the breeding is outside military control. The best type of fly trap yet devised is shown in figure 12.

447. Mosquito destruction. 1. We destroy them in the houses (a) by burning sulphur (1 lb. rolled sulphur to 1000 cu. ft. air space), (b) by burning pyrethrum powder (same proportion as sulphur) (c) by catching individual mosquitoes by hand as follows: A test tube (or a wide mouthed bottle) containing chloroform soaked cotton is put over the mosquito which promptly dies and drops into the bottle. A light is necessary (electric torch preferable) to look in dark corners and closets and under tables and chairs and on wire screens, where mosquitoes roost in the day time.

2. We empty all water from tin cans, old barrels, etc.

3. We cover with wire all cisterns and water barrels.

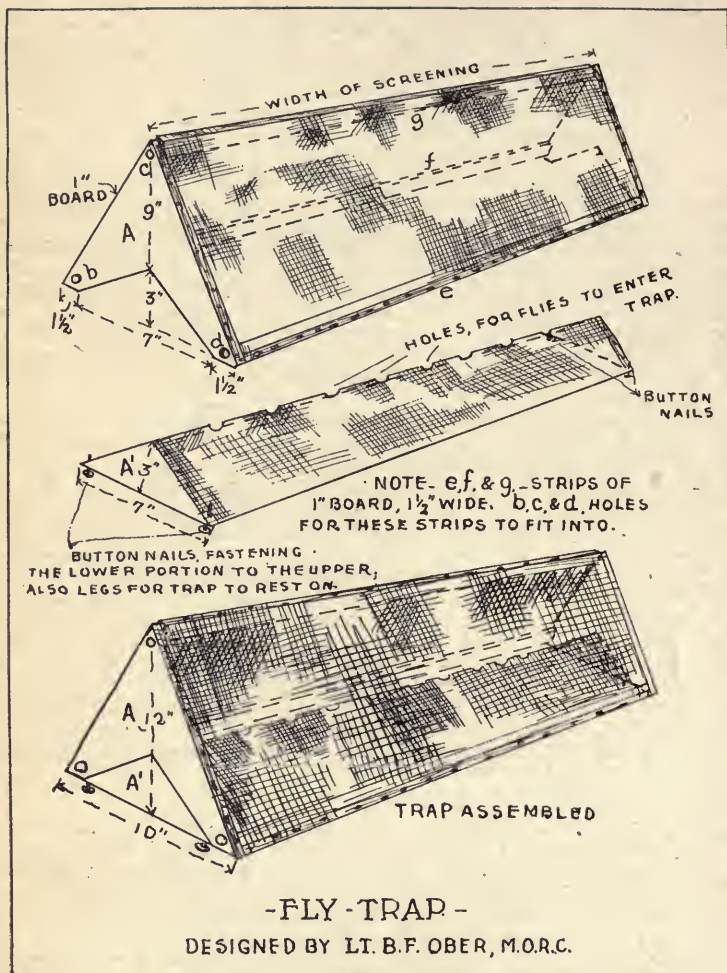


FIG. 12

4. We fill in all puddles and drain off marshes.

5. We put oil or larvacide on all pools and streams to choke the wrigglers.

(a) *Formula for Panama Larvacide.* To 150 gallons crude oil heated to boiling add 30 lbs. of caustic soda or potash, dissolved in 10 gallons of water. Stir well and then add 200 lbs of powdered rosin, slowly to facilitate solution and keep stirring until dissolved. Allow to cool and keep in air tight drums.

(b) Figure 13 shows an oil drum on a brick base with stack for boiling larvacide. The dimensions will depend upon the size of the drum or boiler available.

(c) Mineral oil or some other cheap and equally efficient agent for the destruction of the mosquitoes and their larvae will be furnished by the Quartermaster's Department upon the usual special requisition, the necessity for the issue to be certified to by the post or camp surgeon and the oil or other agent to be applied under his personal supervision.

(d) Larvacide or crude oil will form a pellicle which suffocates larvae coming to the surface to breathe. It will not, however, give a taste to the water, provided the water be drawn from the bottom of the tank or cistern.

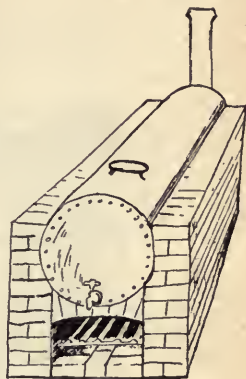


FIG. 13

448. OUTLINE FOR A MODEL SANITARY ORDER GOVERNING CONDUCT OF PERSONNEL FOR A DIVISION OF INFANTRY OR SIMILAR BODY OF TROOPS

Headquarters th Division,
Mobilization Camp No.
(Somewhere in U. S.)
_____1917.

General orders }
No.— }

The following regulations for camp sanitation will govern in this command, and will be strictly obeyed by all concerned.

1. CHIEF SURGEON. The Chief Surgeon is charged with the care of the health of the troops. (a) He will make such inspections in person or cause such inspections to be made by the medical personnel of this command, with reports thereof, so as to assure himself that these regulations are being obeyed, and for the discovery of any condition which would affect the health of the troops.

(b) He will make such reports as are required by regulations, and such other reports as he may deem necessary to make from time



FIG. 14

Applying Oil to Puddles with the Knapsack Sprayer—Panama Canal Zone

to time for the purpose of informing this office of any or all conditions threatening the health of the command, and shall recommend measures to correct faults or to further conserve the health of the command.

2. **SANITARY INSPECTOR.** The Sanitary Inspector is the assistant to the Chief Surgeon, who is charged especially with the supervision of the sanitation of the camp.

(a) He will make continual inspections of the sanitary features of the command and recommend to organization commanders corrective measures applicable to every sanitary fault which he discovers.

(b) He will keep a careful record of all inspections, recommendations, and manner in which sanitary defects have been acted upon. All failures to remedy sanitary defects will be reported in writing to the surgeon for his consideration and submission to the camp commander when necessary.

3. **SANITARY SQUADS.** A sanitary squad will be organized by the Chief Surgeon to assist the sanitary inspector, as contemplated in par. 774-777 M.M.D. Materials and equipment have been provided and will be issued by the Quartermaster upon application by the sanitary inspector.

4. **THE VETERINARY INSPECTOR.** (a) The veterinary inspector is charged with the management of the veterinary service, which will include:

1. The inspection of all animals upon arrival and before entrance to the camps and the isolation of those needing treatment;

2. The conduct of the veterinary hospital and the treatment of public and private animals belonging to troops in the camp;

3. The inspection of beef cattle intended for consumption by the troops before and after slaughter, and the rejection as articles of food all diseased animals.

(b) All equipment and material necessary in the performance of these duties except medicines will be furnished by the Quartermaster Department, and when furnished will not later be diverted to other uses.

5. **REGIMENTAL SURGEONS.** The senior medical officer on duty with a regiment or separate unit will be held strictly responsible for the sanitary condition of the organization to which he is attached.

(a) He will inspect the camps once daily and oftener if necessary;

(b) He will point out to organization commanders any sanitary errors of conduct or conditions and suggest at once the corrective measures advisable;

(c) He will report at once to the regimental commander all sanitary defects or errors not corrected or correctable by organization commanders, within a reasonable time. He will also give a copy of this report, or notes of the question to the sanitary inspector at his next inspection, or before the end of the month.

(d) He will make or cause to be made by a medical officer of his command the bimonthly physical inspection of all the enlisted men of his command, noting the condition of the feet and footwear, the con-

dition of personal cleanliness, and the presence of venereal (or other transmissible) disease.

(e) Any sanitary faults thus discovered will be indicated to the company or detachment commander at once, and venereal cases will be subjected to treatment at once and recorded on the S. & W. report, whether excused from duty or not. A list of those diseased but doing duty will be kept by both the man's immediate commander and the surgeon. Those in the infective state of the disease will be confined strictly to the limits of the camp. (See Par. 92, War Dept. Compilation of Orders.) Report will be made in monthly sanitary report of dates of this inspection.

(f) He will ascertain whether the command is protected from smallpox, typhoid, and paratyphoid, and if not will take steps to complete the immunization. Records will be kept on form 81 M.M.D., attention invited to Par. II G. O. 30, 1914. (The method of smallpox vaccination is prescribed in Bul. 30, 1914. None other will be used) and G. O. 4-23-1915, (par. 273 C. of O.) Cir. 16, W.D., Office of Surg. General, 1916, and G. O. 68, 1917.

(g) He will on the appearance of a case of measles, mumps, tonsillitis, diphtheria, meningitis, typhoid, typhus, small-pox or other infectious epidemic disease in an organization, at once notify the organization and regimental commanders and the chief surgeon of the division.

(h) He will instruct the personnel of his regiment in personal hygiene, sanitation, and first aid.

(6) **REGIMENTAL COMMANDERS** and commanders of smaller units (Medical directors of sanitary train and train commander included in above) are held responsible for the strict observance of these regulations in their commands, and compliance with par. 331 F. S. R. and H. K. 1387, C. A. R. No. 25. Only such sanitary faults as are not correctable by regimental commanders will be reported to these headquarters.

(7) **REGIMENTAL SUPPLY OFFICERS.** Each regimental supply officer or quartermaster attached to organizations is charged with the responsibility of seeing that the troops of his command are supplied with the sanitary conveniences and supplies called for in camp sanitary order, equipment tables, and F. S. Regulations.

(8) **THE COMPANY COMMANDERS.** Each company commander is held responsible for the following:

(a) That the provisions of this order are carried out by the men of his command;

(b) That the ground occupied by his company is properly and adequately policed;

(c) That he is present at the bimonthly physical examination of his men by the medical officer;

(d) That he corrects sanitary faults reported to him by the regimental surgeon or sanitary inspector, if within his authority or power to remedy. If such is not the case they will immediately forward a report on the same for action of higher authority.

(e) He will make daily inspections of his company, giving especial attention to the condition of grounds, tents, or barracks, kitchens, latrines, baths.

(f) He will see that clothing, blankets, and bedding are exposed to the sunlight, weather permitting; tents raised during the daytime in good weather and adequately ventilated at night. All tents will be furled and struck occasionally. No dogs will be allowed in camp. Animals will not be driven through the camp except on roads, nor picketed except on the proper picket lines.

(g) He will see that:

1. All places used as barber shops and all furnishings therein, shall be kept clean at all times.
 - (a) The floors must be kept free from hair, and swept or mopped every day and all furnishings and fixtures kept free from dust.
 - (b) All combs, razors, mugs, scissors, clippers, hair brushes, and other tools shall be sterilized after use on each person, by immersion in boiling water, or in a 2 per cent solution of formalin for ten minutes.
 - (c) Clean towels shall be used for each person.
2. The use of powder puffs and sponges is prohibited.
3. Alum or other material used to stop the flow of blood shall be used in powdered form only, and shall be applied with a clean towel.
4. All cases of skin disease of face or scalp will be reported by the barber to the company commander and by him to the surgeon at once.

(h) He will see that the wastes and trash from the kitchen and company are treated as follows:

Garbage, kitchen refuse, water from the kitchen or water in which eating or kitchen utensils have been washed will be put in the company incinerators—the throwing of same on the ground is prohibited. The use of garbage cans will not be permitted except with a camp scavenger service.

Waste water in amounts too great to put in the incinerator will be poured in the invisible sink. Camp sweepings are put in the incinerator. Tin cans must have the bottoms cut open and be put into the incinerator and then in the ashes for disposal by the sanitary squad (or buried).

(i) He will see that the latrine is burned out daily with straw and crude oil, that toilet paper is furnished in a box to prevent being blown about camps or wet by rain, and that there is a wash stand and water to wash the hands *in the latrine*; that a lighted lamp is kept there from retreat to reveille, that urine tubs marked by lighted lanterns are placed in the company street at retreat and removed at reveille and emptied into the latrine, and that they are similarly burned out daily.

(j) He will see that the bathing places are kept in a clean and inviting condition and that waste water from wash stands and baths is

properly drained into invisible sinks and that his men take sufficient baths and have clean clothing. He will give especial attention to their feet and foot wear required by par. 91, C. of O.

(k) He will see that the kitchens, utensils and ice boxes are kept scrupulously clean, that food and drinks are properly prepared and served, that the cooks are free from disease and that there is a place for them to wash their hands, and that they use it. Neither the cook nor his assistants should have any infectious diseases. If they have, especially gonorrhoea and "walking typhoid" and even trivial ailments, they should be treated by a medical officer at once.

(l) Men will not be allowed to take food into their tents. Eating utensils will be thoroughly cleaned immediately after using in hot water supplied to the kitchen. No garbage or waste water will be permitted to be thrown on the ground.

(m) Water barrels or cans for drinking water will be kept securely covered and set on a frame-work so as to have the faucets three feet from the ground. Water will be taken from the barrels or cans in no other way than by drawing it from the faucets.

Note: (Should the water require sterilizing, order the use of boiled water and the "water bag, field sterilizing").

(n) He will see that his picket lines are kept broom swept, and all manure and straw hauled off daily. A weekly incineration of the picket lines will be accomplished with crude oil, at the rate of 10 gallons to each line. Oil will be obtained from the Quartermaster Corps. All possible breeding places of flies, accumulations of wastes, and filth should be destroyed by incineration and particular attention given to the manure and refuse from the picket lines and stables. Any failure of the sanitary squad to remove manure daily will be reported at once to the sanitary inspector.

(o) He will keep record of all venereal cases under treatment but not excused from duty, and will not permit them to leave camp until no longer contagious.

9. FOOD AND DRINKS. No food, drinks or like commodities will be sold in camp except in the authorized exchanges. A medical officer under the direction of the Sanitary Inspector will visit the authorized exchanges daily noting the cleanliness, character of the food and drink offered for sale, and will inspect the milk served.

10. VENEREAL DISEASES. Attention is invited to paragraph 2, General Orders, No. 17, War Department, series 1912, as amended by General Orders, No. 71, War Department, series 1913, which provides that "Commanding officers will require that men who expose themselves to the danger of contracting venereal diseases shall at once, upon their return to camp or garrison report to the hospital or dispensary for the application of such cleansing and prophylaxis as may be prescribed by the Surgeon General. Any soldier who fails to comply with such instructions shall be brought to trial by court martial for neglect of duty."

In the enforcement of the provisions of the foregoing the following orders on the subject will be strictly observed and enforced:

(a) All enlisted men of this command having sexual intercourse with women whereby they may have been exposed to venereal diseases will report to the camp infirmary of their organization for prophylactic treatment immediately upon their return to the camp, and before repairing to their quarters, regardless of the hour, either day or night. The treatment will be administered by qualified attendants detailed by the surgeon for that purpose. Men who disobey these instructions will be brought to trial.

(b) The circular on venereal diseases supplied by the Adjutant General and furnished each recruit, together with this order, will be read and thoroughly explained by squad instructors, to all recruits on the day following assignment to their squads.

(c) As bearing on this subject, reference is also made to General Orders No. 45, War Department, approved April 27th, 1914, which among other things provides " . . . Hereafter no officer or enlisted man in active service who shall be absent from duty on account of disease resulting from his own intemperate use of drugs or alcoholic liquors or other misconduct shall receive pay for such period of such absence."

11. EPIDEMIC DISEASES. (a) *When a case of an epidemic disease is reported* by a regimental surgeon (see par. 5 [g] above) the following action will be taken:

(1) The company or detachment affected will move its camp to a spot designated by the division chief surgeon and will there remain in quarantine until relieved by order from these headquarters.

2. The company or detachment in quarantine will not mess nor visit any organization nor permit entrance of visitors into its camp during the period of quarantine. It will continue company duties and instructions as far as practicable, but completely by itself.

(3) During the period of quarantine a medical officer will examine the entire personnel of the company in quarantine daily, reporting condition to and receiving instructions from the division chief surgeon.

(4) All cases will be transferred to the isolation annex of the camp hospital.

(b) *Every recruit will be isolated for a period of twelve days after enlistment* in a suitable place designated by its organization commander on recommendation of the surgeon.

(c) *Enlisting officers* will exercise great care to prevent enlistment and assignment of men in the incubating or active period of any infectious disease. Any accepted applicant who is ill will be sent to the camp hospital and his enlistment will not be completed until his discharge from the hospital. If then found physically fit and no longer a menace to the health of the command he may be enlisted.

CORRECTION OF SANITARY FAULTS

449. The conditions of the service are so various that the medical officer must adapt his action to each case, which he should invariably study from a practical standpoint. His first and chief efforts should be bent toward the correction of sanitary faults, which actually have produced or are likely proximately to produce disease, rather than toward

the correction of theoretical defects which, though objectionable in principle, are nevertheless inert, have caused no sickness, and show no likelihood of causing any. It will be time enough to take up the theoretical defects after the practical faults are cured. This is especially important in the field, where theoretical perfection is unattainable. So, again, in recommending or directing corrective measures, the medical officer should take into account not only their suitability to the particular end in view, but their practicability; and when the remedy which is theoretically the best is too difficult to procure he should choose some other one nearer at hand if it will reasonably answer the purpose.

450. Outline for a sanitary inspection of a camp.

1. *Of new arrivals*; recruits for active infections and protection against small pox and typhoid.

2. *Personnel*

Bi-monthly at the least.	{	Of body—especially teeth and feet, cleanliness, venereal diseases or other illness.
		Of clothing—suitability, quantity, repair, shoes, socks, parasites.
		Of bedding—sufficiency, cleanliness, mosquito bars.
		Of tent, hut dugout { Airing, heating, ditching, dryness, crowding, presence of pet animals, cleanliness and ventilation.

3. *Company Street* for trash, garbage, manure, or other organic nuisance, pools and puddles, use of urine tubs at night.

4. *Disposal of wastes*. Garbage cans, kitchen incinerators, scavenger service, dumps, manure, burners.

5. *Toilet facilities*. Baths, wash stands, laundries, adequacy, drainage, water supply and use of latrines, urinals and urine tubs, fly proofing, cleanliness of seats, use of straw and oil for burning out daily, toilet paper, night lantern.

6. *Messing arrangements*.

(a) Supply, care, and preparation of food in stock, supply source, quantity, palatability of water, storage methods, and sterilization.

Note: The following articles and conditions may cause food poisoning:

1. (a) Left-over cooked meat kept too long or left uniced.
- (b) Fish in which decomposition has started.
- (c) Hash made of potatoes and meat is especially likely to cause ptomaine poisoning if kept outside the ice box.
2. (a) Soiled utensils (particularly the meat grinder), in which a certain amount of food may remain after use, are particularly liable to cause poisoning.

(b) Disposal of kitchen wastes: incinerator or garbage cans, scavenger service, adequacy, time of removal.

(c) Use of hot water and dish rags for mess kits of the company, cleanliness of kitchen utensils, presence of flies, their source, and method of destruction.

(d) Physical condition and personal cleanliness of cooks and kitchen police.

7. *Picket Line.* Cleanliness, adequacy of service for removal of manure, pollution of ground in vicinity, fly breeding, health of animals.

8. *Presence of dogs.* *Dogs should not be allowed in camp.* They may be used for catching rats in trenches or store rooms, but only under the direct supervision of a designated rat catcher, and not allowed to run at large. A dog running over an infected farm may easily carry in the dirt on his feet the most contagious animal diseases, not only to *stock*, but *human beings also*. Ringworm, rabies, double-bored tapeworm, and in some instances, through the medium of fleas and ticks, the bubonic plague have been carried by the faithful family pet. Careful bathing of the dog and careful selection of his food, which should never include viscera not thoroughly boiled, are among the preventive measures suggested. Dogs at large defile the camp and may pollute food supplies and forage.

9. *Visitors.* Their character; for example, bootleggers, prostitutes, cocaine sellers, hucksters, and persons with active infectious diseases.

10. *The use of prophylactic provided in orders.* Are venereal prophylaxis and venereal inspections carried out thoroughly and the required monthly report of the number of new cases of venereal diseases sent to the division surgeon each month? Are men protected against small pox? typhoid? paratyphoid?

11. *The presence of mosquitoes in camp.* Source and method of removal of breeding places, method of protection against, screen and nets, head nets on guard.

12. *Reports.* All inspections should be followed, especially in the field, by a verbal or written report, if desired, to regimental commander where irregularities not corrigible by the company commander occur. Never go to a higher authority with a sanitary complaint unless the lesser authority has been interviewed and is unable to correct. Never make a sanitary complaint without presenting a means for its removal. A record of such reports and the action taken should be given the Division Sanitary Inspector at his next visit, and entered on the monthly sanitary report.

Special reports will be made at once to the organization commander and the division surgeon in the following cases:

(a) Acute infectious or contagious diseases developing in barracks or camps.

(b) Cases of fever of 101° or over, attended with albuminuria.

(c) Unusual prevalence of mosquitoes in vicinity.

(d) Development of amoebic or bacillary dysentery or malaria in the command.

(e) Every case of typhoid fever or paratyphoid fever occurring in an officer, enlisted man, or civilian employee.

451. SPECIAL RECORDS OF SANITARY MATTERS

(a) *Of Physical Inspections.* The dates on which physical inspections of the various organizations are made will be noted on the monthly sanitary reports.

(b) *Of venereal prophylaxis*, on form 77 in the case of every soldier reporting for treatment. This will be authenticated by the initials of a medical officer. It will be considered confidential and will not be preserved longer than three months.

(c) *Of vaccination*, on form 81, except as otherwise specially authorized, of each man vaccinated, showing the date and result. Should the soldier leave before the result is ascertained a duplicate of the incomplete vaccination card should be sent to the surgeon of the new command. The surgeon will notify the company commander of the date and result, so that notation may be made upon the service record.

(d) *The syphilitic register*, of every soldier and of every general prisoner suffering from this disease will be prepared on form 78, and he will be treated until cured or discharged, and his register will record the progress of his condition and accompany him until cured or discharged, the surgeon sending it to the surgeon of the patient's new command, or to the Surgeon General when discharged or cured.

(e) *The malarial register* is made on form 56 for every case of malaria, and is kept in similar manner to the syphilitic register.

THE BATTLEFIELD

452. Sanitation of the battlefield. This comprises disposal of corpses, human and animal, disinfection and cleaning out of wells, and sanitation of buildings and towns which may be occupied by our own troops.

(a) *Disposal of the dead.* Unfortunately sentiment still prevails over sanitary science in the matter of demanding burial instead of cremation, though this can be done in the matter of animals.

(b) *Object of Burial.* The object sought in burial is rapid bacterial decomposition which necessitates access of air and circulation of ground water. Close soil such as rock or clay which prevent this, and antiseptics (creosol, formalin or quick lime) are distinctly contra-indicated.

(c) *Choice of site for graves.* A slightly sloping ground, studded with trees with a light calcareous or silicious soil is preferred, near or on the battle field. Graves should not be dug near farms, roads, rivers, water courses, wells, or in low ground liable to flooding.

(d) *Size of graves.* Graves sufficient for 100 bodies should be dug $5\frac{1}{2}$ to 5 ft. deep, 11 feet wide, and 100 feet long. A small blind drain is put in the bottom. The corpses are covered with branches of trees, brush, old clothes, charcoal, turf and earth. The upper end is left open for ventilation.

(e) *Treatment of dead which cannot be buried.* When bodies lie for a long time exposed to the air or are exhumed by explosion of shells, burial may be impossible. The free use of antiseptics, creosol, phenol, quick lime, formalin, or a chloride of zinc solution followed by ferric sulphate to mummify and a slight covering of earth must be employed.

(f) *Disinterment.* This should not be permitted except for sanitary reasons, such as pollution of neighboring wells, springs, or streams. When performed it should be done by special parties, equipped for

the duty with rubber gloves, rubber boots, antiseptics and coffins, which can be immediately sealed.

(g) *Disinfection of polluted wells.* This is performed by cleaning out all corpses, debris, etc., treating with calcium hypochlorite 30 grains to 100 gallons, relining the well and building up the curb.

SANITATION OF OCCUPIED TOWNS

453. Towns may be occupied by troops either to relieve civic conditions after disasters, floods, fires, earthquakes, cyclones, or when captured after bombardment. The following sanitary procedures must be performed in any case where inhabitants remain in the place:

(1) *Reestablish water supply.* To reestablish the water supply all water must be boiled by individuals or supplied by the sanitary service, sterilized, in carts or barrels.

Warning must be given where possible to boil all water for drinking purposes, where the supply comes from private or public wells, or the water mains have burst, or the supply comes from a nearby stream, spring, or lake which has become polluted from corpses or sewage, or intentionally by the retreating enemy.

(2) *Reestablish food supply.* This requires a census and an especial service for issue of rations.

(3) *Remove putrescible matters.* Corpses should be buried; dead animals, fecal matter, garbage, and manure should be hauled away and burned, or buried deeply. Streets and walks should be flooded with water where possible, ditches and drains dug; filth and debris piled leaving clear space for road and access of carts. Quick lime, chloride of lime, crude oil, creolin, or phenol should be used plentifully to keep down flies and odors. Incinerators should be established wherever most needed.

To clean houses, buildings, and premises, the owners or occupants, if any remain, should, where able, perform this labor. Where necessary the sanitary service may furnish materials and labor. Rooms occupied by patients with contagious diseases should be scrubbed and bedding and clothing fumigated.

(4) *Reestablish sanitary conveniences.* To reestablish sanitary conveniences inspect condition of sewers and where possible repair, if usable, temporary closets over manholes may be built of flyproof pattern, if not usable privies should be cleaned out or filled according to circumstances. Latrines may be dug or sanitary pail system inaugurated.

(5) *Sanitary control of inhabitants.*

(a) Where it is necessary to remove persons quarantined for contagious diseases or for having been exposed thereto, especially smallpox, diphtheria, and scarlet fever, they must be removed to separate buildings or camps, and physicians, nurses and food must be supplied.

(b) All persons, societies or institutions taking in refugees from occupied districts should immediately notify the chief surgeon so that an investigation can be made to determine if such refugees have

a communicable disease or have been exposed thereto. A register of all persons coming under the supervision of the sanitary service should be kept.

(c) All refugees sent to large buildings, or volunteered homes, must be examined with especial reference to communicable disease. All suspects should be placed in a detention building or kept under observation.

(d) All persons not protected must be immediately vaccinated against smallpox, typhoid, and paratyphoid.

(e) In time of peace or where a town is occupied peacefully, local boards of health may be kept in offices under the supervision of a medical officer appointed as sanitary officer of the district or town. The assistance of local physicians may be accepted and if necessary compelled. Tent camps should be established for the homeless and destitute and be put under the supervision of a medical officer and such assistants as he may require. The usual rules of camp sanitation will apply.

All of the above activities should be pursued simultaneously, to accomplish which the district or town should be divided into sections, with sanitary squads for each section.

SANITATION OF TRENCHES

454. Sanitary features of prolonged trench fighting. Aside from the attacks from missiles and gas which are met as military incidents, certain conditions peculiar to prolonged trench fighting require sanitary consideration.

(a) *Cleanliness.* It is impossible to prevent the men from becoming extremely filthy in the trenches during rainy and snowy weather, because the trenches cannot be adequately drained. Bailing or pumping out being the methods of necessity, the bottom becomes churned into a horrible mud, infected with tetanus, malignant oedema, gas gangrene, and other infectious bacteria, as well as the bits of blown up corpses. In addition to this, the constant labor of repairs of trenches engenders more dirt and perspiration, to which are added fleas from the rats that infest the trenches, lice, and blue bottle flies. Bathing facilities are nil, the only opportunity being afforded when men are relieved and sent to the cantonment or billets.

Especial attention is paid to the feet, because long standing in wet foot wear leads to trench feet, a condition resembling erythromelalgia, and frost bite producing gangrene. They are prevented as follows: The feet are cleaned and well oiled. Dry woolen socks, outer paper or oiled silk socks or wrappings and rubber boots are put on, in exchange for shoes and puttees, at the trenches. Braziers of charcoal on very cold days and for keeping the trench dry are very necessary adjuncts.

(b) *Clothing in the trenches.* This will depend on the time of the year, but it should be loose and the underwear should always be of wool. The French garment consisting of a large flannel shirt, which can be turned up to form a double thickness over the abdomen is excellent. Rubber boots are kept in the trenches. When relieved,

troops coming out give them to the troops coming in, and resume their shoes and puttees.

(c) *Food.* Little or no opportunity for cooking is found in the trenches, except in the rear trenches and then on braziers which do not smoke. Food must therefore be carried in from the rear and must of necessity be in concentrated form as well as easily digestible. When possible it should be delivered hot. Its constituent parts will depend upon the supply. It should be high in fats and carbohydrates in cold weather. Concentrated soups are the best form of nourishment.

(d) *Dugouts.* These subterranean chambers are dug down until 30 feet of earth stretches from ceiling to ground surface. Before the passage entrance are hung curtains to prevent gas penetration in gas attacks. Ventilation is bad and air contamination high. *Charcoal braziers or heaters are deadly* and must not be used in dugouts. They will suffocate all inmates during their sleep. Coke is similarly dangerous. A clear flamed lamp is best for illumination and heating, though the temperature is kept at a constant heat by lack of conduction and by body heat of the inmates. A chimney of any kind will act as a ventilator, carrying off foul air.

(e) *Exercise.* During occupation of the trenches there is no opportunity for free movement. The limits are prescribed, and very little may be done except stamp the feet and swing the arms. It is only between periods in the trenches that troops have opportunity for exercises. These periods should be utilized to the best advantage always. Lack of exercise favors trench foot, muscle cramps and stiffness.

(f) *Rest.* This is a matter of time and season, also of custom. Men in the front line trenches do not sleep. When relieved, however, they rest as best they can in the cover trenches and dugouts. Fresh troops do not rest well through nervous tension, and the horrid din of constant artillery fire. Seasoned trench fighters, however, do contrive to sleep amid these surroundings. Considerable periods occur during which comparative quiet reigns and men may snatch a nap.

(g) *Water.* Water is supplied by large cans or barrels in bays of communicating trenches, which are replenished at night by water carts from safe supplies in the rear. Men are forbidden to use any other, or to obtain the water except in cups by means of the faucets. It is the business of sanitary squads to look after the water supply.

(h) *Wastes.* Men are forbidden to foul the trenches or to throw about empty cans or containers, scraps of food or trash. All such must be gathered and carried (in gunny sacks) to the rear and buried in pits or incinerated first. The pail system of latrines is possibly the best form for trenches. They are established in bays of the communicating trenches. A simple effective method is shown herewith. Two empty oil cans have the tops cut off and bales made of wire inserted. Over these is placed, bottom up, the box in which they came, with a board cut out of the bottom to make a seat, thus:

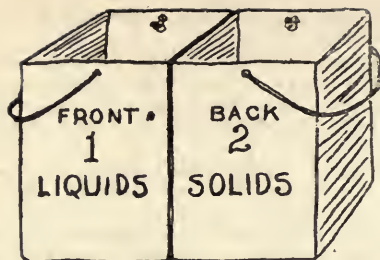
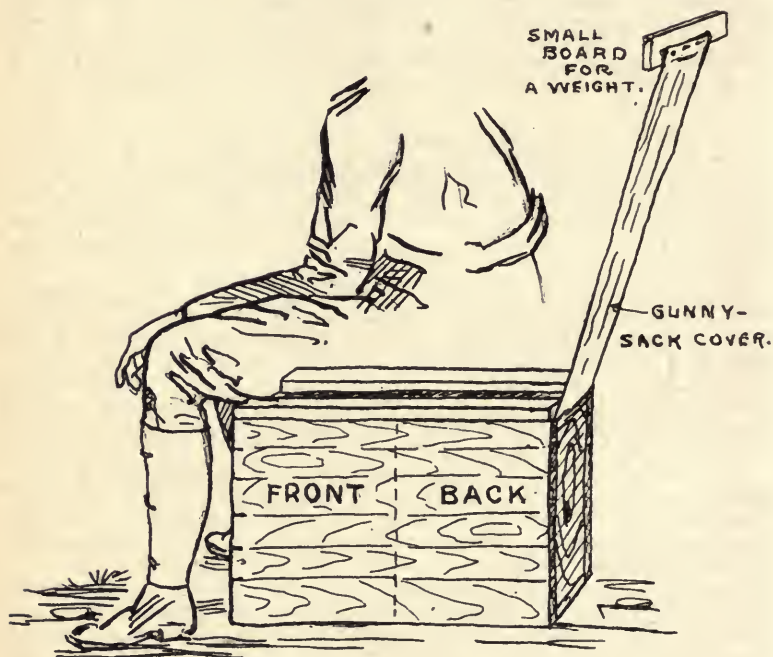


FIG. 15



PAIL SYSTEM MADE FROM OIL CANS

FIG. 16

No. 1 is for liquid, No. 2 is for solid. Therefore, the soldier sits with his feet in front of No. 1, buttocks resting on No. 2. Earth should not be used because it fills the can too soon. A solution of creosol is put in both after painting inside with crude oil, and a piece of gunnysacking keeps out the flies. At night the box is lifted off the cans, strung on poles, and carried back to the incinerator and fresh cans are sent in to replace them.

(i) *Inspections.* Daily inspections will be made of the trenches by medical officers of each battalion and the regimental surgeon.

(k) *Rest and recreation.* These are necessary to support the morale of the troops, keep them from getting stale, and afford recuperation. Troops, therefore, are relieved from trench duty at intervals, and moved back to cantonments or billets.

(l) *Rats and mice.* Long occupied trenches become infested with rats and mice, which live upon the corpses and will attack sleeping men or steal rations left unguarded. Rat traps and terriers are systematically used. Tablets of 4% phosphorous as a poison, or a mixture used by the French of

Flour	750 grams
Water	750 grams
White phosphorous	8 grams
Cheese paste	200 grams
Sugar	100 grams

Sulphur dioxide gas in dugouts is also effective. The rat may also be killed by the use of a virus of a rat disease. Rats are believed to cause trench jaundice.

(m) *Flies.* These are a plague, and consist of *musca domestica*, *calliphora*, *erythrocephala*, the large bluebottle, *Phomia terraenore* (small bluebottle), *Lucilia Castor* (green bottle fly) and *sarcophaga camana* (of Europe). These flies breed in corpses, upon which they feed as maggots and imagos. The usual methods are taken against them, and corpses are treated as described in par. 446.

455. Billeting. Billeting is the assignment of troops to public or private buildings for quarters.

(Note: No soldier shall, in time of peace, be quartered in any house without the consent of the owner; nor in time of war, but in the manner prescribed by law. Constitution, 3rd amendment.)

Whether rented, occupied or preempted, for sanitary reasons private buildings are not to be sought except as a measure of necessity.

(a) *Sanitary precautions in billeting.* It is essential that a sanitary survey be made prior to occupancy. This will include inquiry into the general health of the inhabitants, to be found in the vital statistics of the local health board, if any, or by inquiry, the houses containing or lately containing epidemic diseases, the condition of water supply and sewage disposal, the food supply, the condition of dairies if any, the state of repair of houses, the cleanliness of grounds. Upon the information, the necessary steps are taken to correct sanitary defects.

The capacity of buildings must be estimated with reference to air space, ventilation, heating and illumination.

The sanitation of occupied towns, whether after bombardment or not in the area of warfare, should be conducted as for permanent camps.

456. The sanitation of transports.

The following outline suggests matters to be investigated by the transport surgeon and the Medical Superintendent of Transport Service:

Before embarkation ascertain:

1. Number to be accommodated and the accommodation available, bunks, ventilation, toilet facilities, galley and messing arrangements and adequacy, and cleanliness of the ship.
2. The food supply, source, adequacy, quality, variety, method of storage, cleanliness of refrigerators and food bins, baking department, refrigeration department.
3. Water supply, character and method of purification, *cleanliness of storage tanks*.
4. Laundry facilities (for long voyages). Cleanliness of bedding, when supplied.
5. Health of the crew, cooks, stewards and other persons preparing food. (Contagious diseases, especially active syphilis and tuberculosis.)
6. Health of the troops, freedom from contagious diseases and protection against small pox.

After embarkation.

The inspections called for by Army Transport Regulations.

DISINFECTION

457. Indications for disinfection. Disinfection is required in the field for treatment of corpses too far decomposed to bury, or in case of disinterment and reburial, for the treatment of organic material found in and around villages destroyed by the enemy or occupied by troops, especially polluted wells, cesspools, privies, manureheaps and middens; for the disinfection of buildings and transports to be occupied by troops and which have been occupied by cases of typhus fever, plague, diphtheria or other infectious diseases for the disinfection of clothing infested with vermin, especially the body louse; for use in hospitals for the disinfection of discharges, excreta, and skin, including hair of lousy patients.

458. Varieties of disinfectants. Disinfectants are used either dry, liquid, or gaseous.

1. Dry disinfectants.

(a) *Quick lime* well powdered is used to cover over fecal matter or organic matter when time is short and much has to be done. It is not of any great value, however, and its routine use is not advisable. In latrines it is not only useless, but attracts flies because it is bright and shining.

(b) Ferric sulphate is used to prevent fermentation, well stirred in and heaped over. Its best application is in connection with putrefaction. (c) Chloride of lime is used as a deodorant. It does not have its maximum effect, however, until dissolved.

2. Liquid disinfectants.

(a) Formalin solution, 50 C. C. to a litre of water (5%) made as required, is used for disinfection of hands, clothing (fur, leather and rubber especially) and in the disinterment of bodies or the cleansing of urine receptacles, drains, etc.

(b) *Chloride of lime solution.* Make a paste and then a solution of 1% strength, 100 grams to 10 litres. This should be stirred into the matter to be disinfected. It attacks metals and clothing.

(c) *Phenol and Creosol soap solution.* A 5% solution in water is effective, in disinfecting excreta or discharges, and for rinsing out pails, buckets and other receptacles or urine troughs.

(d) *Crude oil.* Crude oil is especially valuable as a deodorant, a fly repellent and mosquitocide, painted inside urinals, pails used for excrement, the inside of latrines and latrine boxes, or sprayed on puddles or pools.

(e) *Larvacide.* See Pars. 447-51.

(f) *Kerosene oil.* This is efficacious as a pediculicide alone, or when used with an equal part of olive oil, allowed to remain on the scalp for 24 hours.

(g) *Benzine and gasoline* are also good pediculicides for scalp and clothing.

(h) *Copper sulphate.* A 5% solution may be used for urine or feces but it must remain in contact and well mixed for a long time.

(i) *Boiling water.* This is the best disinfectant for materials which will stand its use. It is especially adaptable to clothing, bedding, eating utensils and instruments.

3. Gaseous disinfectants.

(a) *Formaldehyde gas.* To generate formaldehyde gas, 1 pound of formaldehyde solution, $\frac{1}{2}$ pound of potassium permanganate crystals and $\frac{1}{2}$ pint of water are mixed in a deep can (galvanized iron or close stove). The gas generated should be adequate for 1000 cubic feet of air space. Previous to use, all objects to be disinfected should be spread apart or hung up, so the gas may reach; then the windows and doors are sealed with paper and kept so for 24 hours. Or if an ambulance it is covered with tentage or paulins, or if clothing it is treated in an air tight bag.

(b) *Sulphur dioxide gas.* This is made by burning sulphur sticks in an iron pot, 1 lb. to every 1000 cubic feet of air space, the room being tightly sealed. This is good for bacteria and insects, provided the insects cannot crawl into cracks, otherwise bed bugs and fleas may escape. The gas does not affect the eggs.

(c) *Steam.* This is the disinfectant par excellence for such materials as are not injured by it. For clothing, bedding, fabrics, it is

the disinfectant of choice, and its optimum results are obtained under pressure. In the field the following expedients are suggested.

Where a locomotive or other engine boiler is available the boiler is connected with the pipe leading to the disinfection chamber. This may be a freight car or room in a building, or a dugout, around whose walls perforated steam pipes coil and in which are racks on which the articles are hung. The chamber must be hermetically sealed. The Saville bath water heater may be converted into a steam sterilizer by connecting it with boxes or barrels in which the clothing is loosely packed, the tops of the boxes or barrels being air tight and the pipe forming a coil about the inside. A bath thermometer indicates the heat.

(d) *Dry heat.* This may be obtained by use of an ordinary kerosene lamp, over which is placed a stone pipe elbow connecting with a box or barrel or a sibley stove may be used. The chimney of the Guthrie incinerator may be used when garbage is not being burned, garbage giving an odor to the fabric treated. Care must be exercised when using dry heat to prevent scorching and charring.

459. The use of white wash. White wash, made by dissolving slacked lime in water to which is added 2 grams of alum to the litre (30 gains to quart) is a very agreeable cleanly sight applied to stables, out houses, drains, etc., but it should not be used in or around latrines as it is not a disinfectant, and serves only to attract flies, especially if used in the pits.

DEPARTMENT LABORATORIES

460. Department laboratories are maintained for the purpose of making such examinations as can not well be made at the smaller laboratories of post hospitals. Unless otherwise instructed, surgeons may send specimens for examination to the nearest department laboratory, making appropriate explanation to the officer in charge of the laboratory.

461. FIELD LABORATORIES—CREATED BY SURGEON GENERAL

Secretions, excretions, and tissues. In forwarding specimens to the department laboratories the following directions should be observed:

(a) *Blood.* For agglutination tests blood should be sent in Wright's capsules, properly sealed and labeled. For identification of typhoid or paratyphoid organisms blood should be collected in vials of ox-bile medium. Dried smears of blood should be taken in the usual way. Blood for the complement fixation tests should be sent in well-filled Wright's capsules. All requests for complement fixation tests will be made on Form 55q or Form 55r and the first request in each case will be accompanied by a Wasserman card (Form 97), or a cono-coccus fixation card (Form 99) as the case may be.

(b) *Feces and urine.* For identification tests for suspected organisms specimens of feces and urine should be forwarded in small sterile vials. In cases of suspected typhoid or paratyphoid fever

additional specimens should be sent in vials of ox-bile medium. Feces for examination for ova should be mixed with an equal volume of 10 per cent solution of formalin and shipped in sealed vials.

(c) *Spinal fluid*. For bacteriological or serological examinations several cubic centimeters of fluid should be collected aseptically and sent in sterile, well-sealed glass containers. Cytological examination must be made with fresh fluid at the place of collection.

(d) *Sputum, pus, or other exudate*. Specimens should be collected aseptically in sterile containers and sealed with wax or paraffin.

(e) *Stomach contents*. The gastric contents are preferably obtained one hour after an Ewald test breakfast, freed from gross particles by straining or filtration, placed in clean bottles and shipped to the laboratory with the least practicable delay.

(f) *Solid tissues*. Tissues for histo-pathological examination should be fixed and forwarded in 10 per cent formalin or in 70 per cent alcohol, in sealed glass containers. A short clinical history should accompany each specimen. For the identification of negri bodies small smears should be made by crushing sections of gray matter, Ammons' horn or cerebellum, between slides. These smears should be fixed while moist in absolute methyl alcohol and should be sent in 80 per cent ethyl alcohol. The smears should not be dried. Also if possible masses of these nervous tissues should be placed in bottles in pure glycerin, sealed and forwarded for animal inoculation.

When material is sent for identification tests the causative organism suspected should be specified in each case.

Special media for cultivation of organisms may be obtained direct from the laboratories.

Special containers for the collection and transmission of material to the laboratories will be furnished upon request by the laboratory to which the material is to be sent for examination.

(a) All bottles containing fluid material sent through the mails must be securely packed in cotton in double containers.

462.

INSTRUCTION IN FIRST AID

The instructions necessary to enable company officers to drill the enlisted men in their companies in the duties of litter bearers and methods of rendering first aid to the sick and wounded will be given chiefly by practical demonstrations made in their presence. The prescribed drills of the Medical Department will be utilized for this purpose. The practical demonstrations, accompanied by full explanations, should include methods of arresting hemorrhage, of applying the dressings contained in the first-aid packet, of immobilizing a fractured limb, of resuscitating those apparently drowned, etc., and should be supplemented by lectures designed to convey all essential information with reference to the anatomy of bones and blood vessels, the causes and treatment of syncope and of heat exhaustion, the differential diagnosis and treatment of sunstroke, the rationals of the various measures of first aid to the sick and wounded, etc. The editors recommend reading chapter IX of "Privates' Manual" (Moss) which contains a practical outline in first aid.

Special instruction in the methods of rendering first aid to the sick and wounded will be given to all enlisted men of the Signal Corps and of the line of the Army by their company officers for at least twelve hours in each calendar year.

Accidents, requiring artificial respiration—Bul. 37, 1914.

Instruction in hygiene.—Hygiene to commissioned officers of the Army and of the militia at garrison and service schools, as prescribed by general orders issued from time to time for the regulation of military education in the army.

463. Outline of instruction of troops in camp sanitation.

By "Camp Sanitation" we mean what we must do to take care of the health in camp, where we have not the comforts and sanitary conveniences of barracks (toilets, bath-rooms, sinks, running water, etc.) are replaced by various substitutes called "Camp expedients" (latrines, incinerators, urinal tubs, etc.) which are designed to promote, secure and preserve the health and comfort of the troops.

Everything must be done to prevent the existence of conditions that will cause bad odors or favor the breeding of flies and mosquitoes, the two great carriers of diseases. Therefore, we see the vital importance of cleanliness—absolute cleanliness—of body, clothing, equipment, tents, ground, sinks, kitchen, etc.

The tent is your bed room, the company street is your parlor, the vicinity of the kitchen tent your mess hall.

Your tent must be kept clean and in order. When possible, clean your shoes before entering your tent in muddy weather.

Keep the inside of your tent dry and free from odors,—so, in pleasant weather always have your tent walls raised, and air your blankets and extra clothing often.

It is a very natural thing to try and stop up all crevices in and under the tent in cold weather. This will make the tent close and stuffy at night and you will wake up feeling tired, stiff, heavy and possibly with a headache, all due to insufficient fresh air.

In cold weather heat the tent and wrap up warmly and be sure to let in fresh air, preferably through the door.

As soon as your tent is pitched, ditch it. When it rains loosen the guy ropes to prevent the pegs from pulling out and the tent collapsing.

The company street and the ground around all tents must be kept clean. Do not throw food, slop water, rags, paper, empty tin cans, or other trash and refuse on the ground, but put them in the box, the can or other receptacle provided for the purpose or throw them into the kitchen incinerator (the place for the burning of trash and refuse).

Do not defile the company street or camp grounds by spitting, blowing the nose, urinating or moving the bowels there. All these things transfer germs that are liable to cause disease.

Spit in a fire when you have to spit.

Blow your nose in a piece of paper that can be burned or a handkerchief than can be boiled.

Use the urinal tub at night and the latrine by day. If an open trench is used as a sink, always cover your excrement with dirt. If

the sink is inclosed by a box with stool-covers, always put the covers down as soon as you are through so that flies may be kept out.

Kitchen garbage must be burned in a pit by the kitchen or put into covered cans for hauling away. The covers must be kept on the cans at all times, so as to keep out the flies.

Do not ride horses through camp except on the roadways.

The camp is no place for dogs. When you go into the field leave the company dog back in the post, and do not pick up any stray dog on the march. All stray dogs following troops should be shot. Dogs defile the camp,—often spoiling rations in the store-tent, and they easily convey diseases, especially rabies (hydrophobia). A mad dog (that is, one that has rabies) is at first affectionate and then becomes delirious, when he snaps at everything and runs until exhausted.

It is dangerous to pick up tired out or sickly looking dogs, or to fondle strange ones.

Clean your body and your clothes daily as thoroughly as the means at hand will permit. Never lose an opportunity of taking a bath or of washing your socks and underclothing. A bullet passing through dirty clothes will often cause a seriously infected wound which would otherwise be comparatively harmless.

In the morning wash your face and neck with cold water. Do not forget to use your toothbrush afterward.

The feet should be bathed or mopped with a wet towel every evening to invigorate the skin. Dirty feet invite blisters.

The feet should be kept clean and the nails cut close and square. An excellent preventive against sore feet is to wash them every night in hot (preferably salt) water and then dry thoroughly.

Rubbing the feet with hard soap, grease or oil of any kind and putting foot powder in the shoes before starting on a march are also good.

A little alum in warm water is excellent for tender feet.

Blisters should be pricked and the water let out, but the skin must not be removed. Adhesive plaster on top of the blister will prevent the skin from being pulled off.

In the continued absence of opportunity for bathing it is well to take an air bath and moist or dry rub before getting into fresh underclothes.

If the lack of opportunity to wash clothes continues for any length of time, soiled clothes and bedding must be frequently exposed to the sun and air. Sunshine is a good germ killer.

In cold weather do not go around without an overcoat just to show how foolish you are.

Do not go without a hat in the tropical sun.

Wet clothes should be changed at the first opportunity. Never let wet shoes dry on your feet over night.

In cold weather make your bed on the ground or straw, leaves or branches for warmth. In warm weather bunks are preferable.

Never sleep on the bare ground, especially damp ground, when you can get hay, straw, grass, leaves, branches or anything else.

Before going into the field see that your clothing is in good repair, all buttons are on, your underwear in good condition, your socks have no holes, and that your shoes are sound and strong, and have no hob nails.

Carry an extra pair of shoe laces. A loose shoe resulting from broken lace will soon cripple you.

Always wear woolen socks when marching. Cotton socks are forbidden.

Wear shoes that fit and keep them soft with grease.

Under no circumstances should a soldier ever start off on a march wearing a pair of new shoes which have not been properly fitted.

Be sure to have some needles and pins in a well-corked bottle (to keep from rusting), some coarse thread, some buttons, a pair of small scissors, a string, an awl and a small knife.

Keep the body properly fed. Do not eat all of your day's ration at the first halt and do not buy fruit and pies from peddlers, but eat what comes from your company kitchen.

In the company kitchen there should not be a single fly on the food although there may be flies in camp. Food must be kept screened or covered until served, and not served until ready to be eaten.

If you are the company cook, keep everything in your kitchen and mess tent clean with hot water and soap. Boil your utensils and dish rags. Throw all your slops and garbage into your kitchen incinerator.

Stable sweepings if well dried and mixed with twigs, leaves and rubbish will make fuel and save kindling wood.

Importance of good health. The strength of an army is not in its muster rolls, but in the number of men able to fight. Every sick man takes one rifle away from the firing line.

Good health is just as necessary to any army as rifles and ammunition.

A sick army is only a hospital, and no hospital has ever won a battle.

Because of the great demands made upon the body by marching, exposure to all sorts of weather and other hardships, and the nervous and physical strain of modern battle,—because of these demands upon the body, there is no other business in the world in which success depends so much on good health as does the business of soldiering. Indeed, it is just as necessary for you to take care of your health as it is for you to take care of your rifle and ammunition.

History shows the importance of doing everything possible to care for one's health by the fact that in every war from the earliest times down to the present, many more men have succumbed to disease than were killed in battle or died from wounds.

CHAPTER IX

SANITARY TACTICS IN THE ZONE OF THE INTERIOR

464. Definition. Sanitary tactics may be said to be the art of the care and disposition of the disabled (from time of incidence of disability until the patient is restored to duty or is discharged or dies) in harmony with military operations so that the fighting elements are disembarrassed of the disabled with the maximum of celerity and the minimum of transportation and personnel.

Sanitary tactics employs especially organized and trained personnel and equipment, and furnishes special supplies.

465. Has three phases corresponding to the three zones of military activity.

1. *In the zone of the advance* it comprises especially divisional problems. Its distinguishing features are:

- (a) Care and transportation of disabled on the march.
- (b) Battle disposition of sanitary detachments with regiments.
- (c) Battle disposition of sanitary train organizations under the direction of the Division Surgeon.
- (d) The evacuation of the disabled to the zone of the line of communications, from the firing front.

(e) Battle supply of sanitary stores.

2. *In the zone of line of communications* the distinguishing features are:

- (a) Advance organizations to receive the disabled from the zone of the advance.
- (b) Methods of transportation to the base and care enroute.
- (c) Delivery to the zone of the interior of all cases of long convalescence or permanent disability.
- (d) Treatment of slight cases and temporary disability and return to their commands.

(e) Forwarding of supplies, equipment and men to the sanitary service of the zone of the advance from the zone of the interior.

3. *In the zone of the interior.* The distinguishing features are:
(a) Expansion of general hospitals and establishment of new ones. (Note: By Red Cross organizations.)

(b) Conversion of civil hospitals to military uses. (Note: By Red Cross organizations.)

(c) Sanitary service of mobilization and concentration camps.

(d) Supply of sanitary stores, organizations and equipment for service in the theatre of operations.

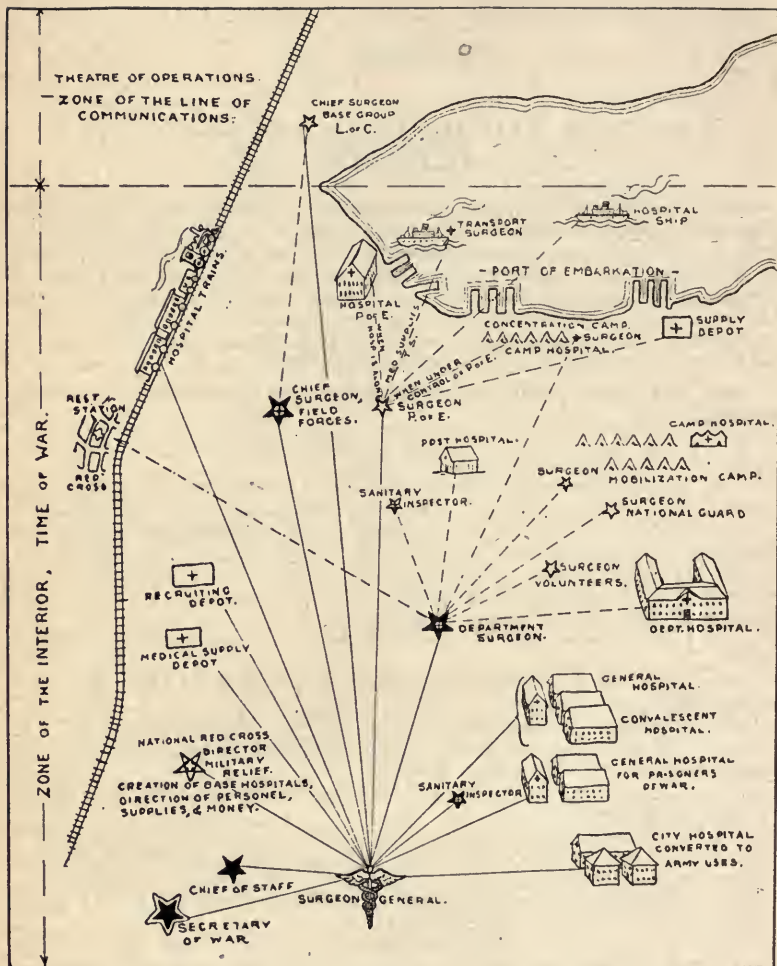


FIG. I

(e) Recruitment and training of sanitary troops to create new organizations and supply losses.

(f) Hospital trains, boats and ambulance service.

PHASES OF SANITARY TACTICS IN ZONE OF INTERIOR

466. Estimation of bed capacity. This is a matter of bed capacity and will depend upon the frequency and severity of the engagements. There have been instances when it has reached 40 per cent of the strength of the Army maintained at the front. A bed capacity equivalent to 10 per cent of the total force in the zone of the advance must be immediately available when troops take the field, and facilities must be provided for promptly supplementing that number should the occasion require.

Base or general hospitals are allotted in the proportion of 1 to each 500 beds to be provided.

467. Estimation of personnel. It may be assumed that the total medical personnel required from front to rear will be equivalent to 10 per cent of the total strength of the troops in the home territory and in the theatre of operations. Of this personnel, it may be assumed that 8 per cent will be required to be organized and that 2 per cent will be unorganized (individual voluntary aid and civilians impressed or hired as occasion may demand). Of the total of 10 per cent required it may be assumed that the medical service of the Army will be handled by civilian assistants to the extent of 3 per cent (1 per cent organized into hospital columns and field columns and 2 per cent unorganized); and that the 7 per cent belonging to the Army will be distributed as follows: Medical officers, 0.74 per cent; Nurses Corps, 0.52 per cent; Enlisted, 5.74 per cent. The total number of medical officers required may be estimated at 1 per cent or above, assuming that whatever is required above 0.74 per cent will be furnished from civilian sources (Medical Reserve Corps). Of the 17 per cent of sanitary personnel thus provided, 4 or 5 per cent may be assumed as allotted to the zone of advance and the balance on the line of communications or in the home territory, depending upon the policy of the administration as to where the sick and wounded sent to the rear are to be cared for.

In the past, armies have required for this sanitary service as a whole, from front to rear, 1 individual for every man sick or wounded, this being due to the fact that more than one half of the personnel required for the service is held in readiness to render first aid, and transport disabled to the rear, and is not available for their care thereafter.

468. The Service of the Interior.

Note: The same general principles of administration hold for armies, army corps and divisions when operating in the service of the interior and in the zone of the line of communications or when operating in the zone of the advance. (F. S. R. 269.)

1. The function.

(a) In time of war to supply the commander of the field forces with the means necessary to carry out this mission. (F. S. R. 250.)

(b) In time of peace to maintain and prepare the armed forces of the U. S. for war.

2. *Is carried on by*

(a) The Surgeon General.

(b) Department Commanders.

(c) Commanders of { concentration camps } in certain
 { ports of embarkation } instances.

(F. S. R. 250)

{ Commanded
 by the
 Secretary
 of War
 through the
 Chief of
 Staff.

469. Duties of the Surgeon General in Peace and War.

(a) He advises the Secretary of War and the Chief of Staff of all matters connected with administration of the Medical Department.

(b) He keeps informed of the plans of the field forces in order to recommend the steps to be taken by his department to contribute to the successful issue of these plans.

(c) He controls directly and is responsible for the efficient operation of the general depots of supply, general hospitals and other military establishments placed under his orders.

(d) He is charged with the accumulation of the necessary supplies and matériel and with forwarding the same, in accordance with regulations, to the point where they come under the control of the department commander, the commander of the field forces, the commander of the port of embarkation, and in certain instances the commander of a concentration camp.

(e) He formulates estimates for the necessary appropriations to carry on the operations of the Medical Department. (F. S. R. 251.)

(f) He controls directly and is responsible for the medical administration of all the military forces of the government which are exempted from the control of department commanders (quod vide) and indirectly through the Department Chief Surgeons of the medical administration of troops under department commanders.

469½. Expansion of organizations for war.

(a) Peace organizations of the Medical Department in the service of the interior as post hospitals, general hospitals and medical supply depots must be largely augmented.

(b) The requirements of the theatre of operations, which must receive first consideration, will necessitate the substitution to a very large extent of personnel from the Medical Officers' Reserve Corps, the Volunteers, the National Army, the American National Red Cross and other civilian sources, in place of the Medical Corps, enlisted force Medical Department, and Army Nurse Corps assigned to these institutions in times of peace.

(c) As a part of the service of the interior a medical service for the transportation of the sick and wounded and their care while in transit will be organized in rear of the theatre of operations.

(d) The Regular Army is mobilized at its permanent posts or stations and the Organized Militia at mobilization camps.

Note: All organizations of the sanitary service in the department of the interior are either under the direct control of the Surgeon General or under the direct control of Department Surgeons.

Department Surgeon's Administrative Duties in Time of War.

Department Surgeons are charged, in addition to the duties prescribed for time of peace, with the supervision of the sanitary service in connection with the mobilization of the Reserves, National Guard, or volunteer forces, within departmental limits. The National Army mobilization camps are not under the control of department surgeons.

470. The duties of the Department Sanitary Inspector.

(a) To serve as assistant to the Department Surgeon and to assume the duties of that officer when the latter is absent.

(b) To have charge, under direction of the Department Surgeon, of all matters relating to the sanitary care of troops.

(c) To scrutinize the sanitary reports rendered by medical officers conformably to Army Regulations.

(d) To recommend the issue at proper times, of orders containing specific instructions regarding hygienic and sanitary matters.

(e) To proceed, when authorized, to points threatened by seriously insanitary conditions for the purpose of studying such conditions and of recommending and supervising measures for their correction.

(f) To make himself thoroughly familiar with the sanitary conditions at and near each point within the jurisdiction of the department commander where troops are stationed.

(g) To make himself thoroughly familiar with the amount and character of field equipment and supplies pertaining to the sanitary service at each post in the department, and to assist the Department Surgeon in formulating such plans for mobilization as will result in the sanitary troops arriving at their concentration camps equipped as prescribed in regulations.

(h) To make annual inspections at such garrisoned stations as the Department commander shall designate.

471. Sanitary inspections. These inspections are of two (2) kinds: Those pertaining to sanitation, and those relating to the administration of the Medical Department.

1. *First class* should cover all matters pertaining to the hygiene and sanitation of the command, including the prophylaxis of the command against epidemic diseases, especially smallpox, typhoid, paratyphoid and venereal contagions.

(a) *Reports of these inspections* will include recommendations as to appropriate remedial measures for conditions needing correction. They will be made in duplicate. The original will be forwarded promptly to the Surgeon General through military channels; the other copy will be filed in the office of the Department Surgeon. In addition the inspector will, on completion of inspection at any point, furnish the local commander a written statement of all irregularities and deficiencies observed.

2. *The second should include the following points:*

(1) Hospital administration, including the care of the sick, cleanliness, neatness and order of hospital buildings and grounds; character, sufficiency, care, and issues of medical supplies; records; hospital funds; mess management.

(2) State of instruction, discipline, adequacy, and efficiency of the personnel of the Medical Department.

(3) Preparedness for field service including the character, care, and sufficiency of equipment, supplies and means of transportation.

(4) Any other matters which pertain to the Medical Department of the Army.

(a) *Reports of these inspections* will be forwarded through military channels to the Surgeon General. A duplicate will be filed in the office of the Department Surgeon. In addition the inspector will forward, through military channels, to the commanders of the Medical Department organizations concerned, a written statement of all irregularities and deficiencies observed. These officers will, without delay, report by indorsement thereon what remedies they have applied or will apply to correct each of the irregularities or defects noted.

MEDICAL OFFICERS OF THE TRANSPORT SERVICE

(See A. T. S. Regulations)

472. The Medical Superintendent.

1. Assignment of, by orders of War Department. (A. T. S. R. 5.)

2. Status of. Must be an officer of the Medical Corps, U. S. Army.

3. Station of. At the home port.

4. Duties of (A. T. S. R. 8a).

(a) He reports to the general superintendent and advises him in sanitary matters and in the administration of the medical service on board. Makes personal minute inspection of each transport on arrival and prior to departure.

(b) He submits to the general superintendent necessary recommendations relative to food supply and sanitation.

(c) He will make or cause the transport surgeon to make the necessary inspection of all persons embarking or disembarking to determine the presence of infectious diseases.

(d) He will retain and make proper disposition of persons with infectious diseases.

(e) He provides for the reception and care of military persons unfit for travel.

(f) He will become familiar with quarantine regulations, domestic and foreign.

(g) He is responsible for the efficient administration of the Medical Department of the Transport Service.

(h) He employs civilian clerks, etc. (A. T. S. R. 7.)

473. Sanitary service of transports.

1. The Surgeon: see A. T. S. R. 5, 4, 149, 164.

(a) Duties of: see A. T. S. R. 27, 178, 179, 180, 181, 182, 183, 184, 195, 232 (par. 1), 87, 176 and 252.

2. Medical attendants and care on: see A. T. S. R. 27, 177.

(a) The hospital of: see A. T. S. R. 176, 154, 148, 27, 182.

(b) In order that officers and enlisted men while on board Army Transports may not, at any time, be without medical attendance, officers of the Medical Department and contract surgeons who may be assigned to duty as transport surgeons or with troops about to travel on transports will go on board the vessel, in every case, as soon as the first of the troops ordered to travel thereon shall embark, and all orders affecting their assignment to such duty will be so issued as to enable medical officers and contract surgeons to comply with this order. (Paragraph 2, G. O. 48, 1908.)

3. Personnel of Medical Department: see A. T. S. R. 177.

4. Inspections: see A. T. S. R. 245 to 251, incl. 252, par. 3, 86, 195.

5. Employment of civilians by medical superintendent.

6. Nurses traveling on: see A. T. S. R. 177, 147, 164.

7. Quarantine: see A. T. S. R. 184, 10, 178, 68, 183.

474. Duties of the Surgeon, port of embarkation.

(a) He is the sanitary adviser of his commanding officer in all matters pertaining to the Medical Department.

(b) He has the control of the port of embarkation hospital when it is not a branch of a general hospital.

(c) He provides medical attendance at the headquarters to which he is assigned.

(d) He is the medical superintendent of the transport service.

(e) He provides medical supplies, including those required by transports.

(f) He will be camp surgeon of the concentration camp so long as it is controlled by the commander of the port of embarkation.

Note: The commander of the port of embarkation, his staff and personnel, are not subject to the orders of the commander of the troops at the concentration camp nor the latter commander to the orders of the former.

The commander of the port of embarkation prepares a schedule for the embarkation of troops, matériel and supplies on transport, and has charge of such embarkation. The commander of the camp issues the orders necessary to carry out these schedules and details a staff officer to assist the commander of the port of embarkation during the loading. Under all conditions these schedules will be made only after consultation with the superior commander of the troops to be embarked. (F. S. R. 257.)

475. Commander of concentration camp.

In case the concentration is ordered at a port of embarkation already provided by higher authority with a staff for receiving and forwarding troops, the responsibility for camp sites and facilities and the necessary supplies devolves upon the commanding officer of the port of embarkation.

476. Preparation of concentration camp.

Under these circumstances the necessary staff officers will be sent in advance by the commander of the troops ordered to the camp to coöperate in making the detailed arrangements. But in case no such permanent staff is provided at the port of embarkation, the staff of the command concerned must make all provisions for receiving, camping, and supplying the troops. The necessary supplies are obtained by ordinary methods of requisition or purchase. (F. S. R. 255.)

477. Location of concentration camp.

A concentration camp is a place near the scene of intended operations or near an embarkation point, where troops are assembled for immediate use against the enemy or for transport to an overseas theatre of operations.

The command of troops at a concentration camp lies with the department commander in whose territory the camp is situated, unless these troops pertain or are assigned to a commander not under the department commander's orders prior to the concentration. The commander of the concentration camp deals directly with the War Department. In cases where it is desired to make an exception to the foregoing rule, or where doubt may exist, the authority ordering the concentration should define in orders upon whom the command falls and to whom the commander reports.

478. Concentration at a point near the scene of intended operations.

In case the concentration is ordered at a point near the scene of operations when troops are assembled for immediate use against the enemy, the necessary line of communications personnel will, if practicable, be ordered by the War Department to report to the commander of these troops and will be sent in advance by him to the camp to make all preliminary arrangements for receiving, camping, and supplying the troops. If, however, no additional personnel for the line of communications is provided by the War Department, the commander of the troops concerned designates the necessary personnel from his own command and sends them ahead to make the preliminary arrangements. (F. S. R. 256.)

479. The camp surgeon. The camp surgeon is the senior medical officer on the staff of the camp commander.

480. His duties. The sanitary service of the concentration camp is under his direction and in addition to his routine duties as camp surgeon he will continue the instruction of the personnel begun at the home stations of the troops or at the mobilization camps.

He will ascertain by inspection of descriptive lists, vaccination registers, and other records available whether the prescribed vaccinations and physical examinations of all the personnel of the camp have been made and complete inoculations or vaccinations as may be necessary.

He will make sure that all troops are equipped as contemplated in regulations. (See Surgeon of Mobilization Camp.)

He will provide a suitable place in which the personnel attached to organizations may hold sick call and will furnish the necessary supplies for the treatment of the sick.

He will provide a hospital for the camp upon requisition, unless other hospital facilities are available in the immediate vicinity.

The supplies and equipment of sanitary organizations temporarily at the camp will be maintained intact, being used only for the purposes of drill and instruction.

481. Convalescent camps. Convalescent camps will be established as branches of general hospitals for patients who no longer need hospital treatment but are not yet able to return to their commands.

482. Hospitals, ports of embarkation.

(a) *Where there is a general hospital* any further hospital accommodation that may be required will be operated as branches of the general hospital.

(b) *Where there is no general hospital*, a port of embarkation hospital will be established and operated under the immediate control of the surgeon, port of embarkation.

483. General hospitals for prisoners of war. These hospitals will be established by the Surgeon General at points determined upon by the Secretary of War, and will be managed under the direction of the Surgeon General, except the officer charged with the custody and safe keeping of the prisoners will maintain such guards over the hospital as may be necessary to prevent the escape of the prisoners therein. M. M. D. 611.

484. Hospital ships and ships for patients. These ships are required on oversea expeditions. They will be provided by the War Department.

(a) *Hospital ships* are Medical Department organizations and will be used solely by that Department.

(b) *Ships for patients* are ordinary transports or vessels turned over to the Medical Department for temporary use in emergencies when hospital ships are not available.

(c) Personnel and equipment of: will be determined according to the needs of each case.

(d) Commanded by medical officers of the Army (including those furnished by the American National Red Cross).

(e) Uses of: carrying sick and wounded between ports, carrying medical personnel and supplies (when this does not interfere with their primary object).

(f) Notification of prospective time of arrival of: So far as possible the commanding officer of the ship will notify the receiving hospital, in advance, of the prospective time of arrival and the number of patients aboard.

(g) Army has no hospital ships at present (July 11, 1917).

(h) *Regulations for Hospital Ships and Ships for Patients.*

Hospital transports, boats, and railway trains, after being properly assigned as such will be exclusively under the control of the Medical Department and will not be diverted from their special purposes by orders of local or department commanders or officers of other staff corps. (A. R. 1440.)

485. Hospital trains and trains for patients. Hospital trains and trains for patients (in the service of the interior) will operate under the direction of the Surgeon General. The senior medical officer on duty with the train commands it and he will, some hours before it is due at the hospital which is to receive its patients, notify the commanding officer of the latter by telegram of the time of its arrival and the number of patients to be provided for.

486. Rest stations. (M. M. D. 618.)

Rest stations will be organized on the railway lines where attention can be given to sick and wounded enroute. Personnel will be obtained from the American National Red Cross.

487. Hospitals and medical attendance.

The Medical Department is charged with the duty of caring for the sick and wounded and the management and control of military hospitals.

488. Classes of military hospitals.

1. *In peace*, except under field conditions, or in the occupation of territory outside of the continental limits of the United States, but three classes of Army hospitals are maintained, viz., post hospitals, department hospitals and general hospitals. (M. M. D. 204.)

2. *In war* additional general hospitals will be established by the Surgeon General; post hospitals and general hospitals will be augmented by National Red Cross, Reserve Corps and Volunteer personnel. (For field hospitals, see Zone of Advance.)

(General Hospitals are designated in S. O. 204, W. D. 1899.)

489. The Government Hospital for the Insane. This hospital was established in the District of Columbia by the Act of March 3rd, 1855, for "the most humane care and enlightened curative treatment of the insane of the Army and Navy of the United States and of the District of Columbia."

490. General regulations for service of hospitals.

Who are entitled to admission:

See Army and Navy General Hospital, Hot Springs, Ark.,
Army and Navy General Hospital, Fort Bayard, N. M.,
Government Hospital for Insane, Washington, D. C.

(1) Officers and enlisted men on active list.

(2) Contract surgeons.

(3) Army nurses and Reserve nurses on active duty.

(4) *Officers and enlisted men of the Organized Militia* while attending national rifle contests or joint camps of instruction will be admitted to field hospitals of the Army on the approval, respectively, of the executive officer of the national matches or the commanding officer of the joint camps of instruction. (A. R. 1459.)

(5) *Sick or wounded soldiers, discharged while in hospital*, will be entitled to medical treatment in hospital, and to the usual ration during disability, or for the period considered proper for them to remain under treatment, but a discharged soldier who has left the hospital will not be readmitted except upon the written order of the commanding officer. (A. R. 1452.)

(6) *Recently discharged soldiers, needing hospital treatment* who arrive in New York City, San Francisco, or other port on Government transports, may be sent to one of the military hospitals in the vicinity, and rations in kind drawn for them while undergoing treatment. (A. R. 1453.)

(7) *Members of the families of officers and enlisted men* requiring hospital treatment or isolation will be admitted to Army Hospitals when suitable accommodations for their care are available. (A. R. 1459.)

(8) *A civilian seaman or river boatman* will be admitted to an Army Hospital only on permit issued by a medical officer of the Public Health and Marine-Hospital Service or by a custom officer, unless his condition demands immediate relief, when in the discretion of the post commander he may be admitted in advance of the receipt of the permit. (A. R. 1459.)

(9) *A civilian employee on duty at a station where other than Army medical attendance cannot be procured* is entitled, when necessary to admission to hospital. (A. R. 1458.)

(10) *Civilians not in the public service* will be admitted to hospital only in cases of extreme necessity and by permission of the commanding officer on the written application of the Surgeon. Their food will be purchased from the hospital fund when they have the means to reimburse that fund for such purchases. In case of destitution rations may be issued to them under the conditions laid down in par. 1241. (A. R. 1459.)

491. Distribution of patients. Upon his admission to hospital a patient will first be taken to the receiving ward, or to the office, where his register card will be filled in so far as the data are available, the treatment ward to which he is assigned being noted on the back thereof. There will also be entered on a clinical record brief (Form 55a) the patient's name, rank, organization, etc., the diagnosis on the transfer card, if one has been received, and the designation of the ward to which he is assigned. This form will accompany the patient to the ward and will be the wardmaster's authority for his admission thereto. The diagnosis of the case will be furnished to the office by the ward surgeon with the next morning report of the ward. (Par. 211.)

492. Patients will not be transferred from one ward to another without the authority of the commanding officer of the hospital. Any such transfer will be reported to the office with the next morning report of the ward from which the case is transferred, giving the patient's name, rank, company, and regiment or corps, and state the fact that he has gone from one ward to another designating them. A memorandum will suffice, or register card, Form 52 may be used.

At the office a memorandum will be made on the back of the register card, which will show what ward the patient is in.

493. Morning report of ward. Each ward surgeon, immediately after his morning round of the ward will forward to the office a morning report of the ward on Form 72, (a) diagnosis slip for new admissions, (b) by all changes of diagnosis cards, (c) by the clinical records of all cases completed in the ward or which depart from the ward otherwise than by transfer to another ward, (d) and by the notices of cases transferred to other wards since the preceding reports. Ward morning reports are not preserved.

494. Change of diagnosis cards. (M. M. D. 212, 213.) When the diagnosis of a case *under treatment in ward* is changed, or complications or sequelae develop, report thereof should be made to the office upon a register card, making it in red ink "Change of Diagnosis," and forwarding it with the next ward morning report.

When the diagnosis of a case *under treatment in quarters* is changed, or complications or sequelae develop, a report thereof upon a card similarly marked should be forwarded to the office by the attending surgeon within 24 hours who will sign or initial it. It will be filed with the register card of the case to which it relates as the voucher for the correction of the register card conformably to M. M. D. 436.

495. Transfer of patients. (M. M. D. 214, 217.)

(a) *Reason of transfer:* Under proper military authority, for observation or to obtain better treatment or hospital accommodations.

(b) *Transfer Card:* A duplicate of the patient's register card, Form 52 (headed, "Transfer Card"), including the information thereon in space 18 including details of the case will be signed by the transferring medical officer. The transfer card of a patient sent to a general hospital for observation and treatment should, in time of peace, and when practicable, in time of war, be accompanied by a copy of the clinical record of his case.

(c) When more space is required to perfect entries on a transfer card an extension slip should be used in the manner pointed out in M. M. D. 434a. See Record of Disabilities.

(d) *How Sent:* The transfer card will be sent to the surgeon of the receiving hospital or command; but in transfers to the Government Hospital for the Insane it will be sent to the Surgeon General, with a copy of the medical certificate required by the Department of the Interior attached. (See Army Regulations: Government Hospital for the Insane.)

(e) If the patient is to be unattended enroute, the transfer card may be transmitted in his care, or by mail, at the discretion of the transferring officer. If the patient is to be under the charge of an officer or soldier while enroute, the card will be transmitted through the officer or soldier so in charge.

(f) When many patients are transferred at one time under the charge of an officer or soldier while enroute, the transfer cards will be verified personally by such officer or soldier, or when the number

transferred is too great for personal verification, by his subordinates or assistants. (M. M. D. 583, 584.)

(g) The surgeon of the receiving hospital or command will note on the back of the transfer card the fact and date of the arrival of the patient at his station and forward the card with his next report of sick and wounded. The surgeon of the receiving hospital or command will make a register card, Form 52, of the case (see par. 428), noting thereon such of the information conveyed by the transfer card as is pertinent.

(h) Should the person named on a transfer card transmitted by mail not arrive at the receiving hospital within a reasonable time, the surgeon thereof will note on the back of the card the fact that the patient did not arrive, and forward the card with his next report of sick and wounded.

496. Refusal of surgical treatment. An enlisted man who refuses to submit to a surgical operation that the attending surgeon certifies is without appreciable risk to the life of the soldier and is necessary for the removal of a disability that prevents the full performance of any and all military duties that properly can be required of the soldier will, for such refusal, be brought to trial by General Court-Martial under charges preferred under the 96th Article of War; but if in any such case the attending surgeon is in doubt as to whether the proposed operation involves appreciable risk to life the soldier will not be brought to trial, but will be discharged on certificate of disability.

When an enlisted man is brought to trial for this offense the surgeon will furnish the required certificate.

497. Effects of patients.

(a) *Who is responsible:* The commanding officer of the hospital is responsible for the money, valuables, clothing, and other effects of patients admitted to the hospital. They will be receipted for, and when practicable, deposited in the hospital safe or in a bank. Enlisted men are forbidden to retain money or other valuables received from patients for safe keeping.

(b) How checked:

In the presence of the patient, or of another enlisted man in case the patient is unconscious or insane, his clothing and other effects will be tagged (Form 76) for identification and listed in duplicate on the patient's property card (Form 75). This list with the effects will then be sent to the individual in charge of the store room for patients' effects. He will retain the original list and turn in the duplicate to the record office, or give it to the patient as the regulations of the hospital may provide. In the smaller hospitals the duty of caring for patients' effects as outlined above will devolve upon the wardmaster; in general or other large hospitals it will be performed as directed in par. 303, M. M. D.

(c) *The soiled clothing of patients* will be washed before it is put away, as a part of the hospital laundry. Such measures of disinfection as may be necessary will be taken and accounts for the expense in-

cident thereto will be forwarded on Form 330, W. D. for settlement, with an explanation of the circumstances.

(d) *When the patient goes to duty, is furloughed, or is discharged from the service the surgeon will restore his effects and take his receipt.*

(e) *When a patient leaves a hospital, if he is unable to take care of his effects, they will be entrusted to the ranking officer or soldier in whose charge he is put with a list of the effects. He will receipt therefor. On arrival at destination he will turn them over with the list, to the commanding officer of the receiving hospital, and take his receipt therefor.*

(f) *In the event of the death or desertion of enlisted or commissioned patients or of military prisoners in hospital, their effects will be disposed of in accordance with the provisions of Army Regulations. In the event of the death of a soldier (retired) in a military hospital leaving effects and a will, notify legatee that the effects will be turned over to the legal representative appointed by the court of the domicile of the deceased and if none appear then—see Army Regulations. (Bulletin 20, W. D. 1912.)*

(g) *The effects of deceased civilian patients, if claimed within a reasonable time, will be delivered to their legal representatives. If not claimed within a reasonable time they will be sold by the hospital council and the proceeds taken up and accounted for with the hospital fund. Should claim thereafter be made within three years for the proceeds, the same may on the authority of the Surgeon General be paid over to the legal representative of the deceased. A similar procedure will be followed in the case of effects abandoned by civilian patients upon their departure from the hospital. Watches, trinkets, personal papers, and keepsakes of civilians will not be disposed of as long as there is a fair prospect of finding their rightful owners.*

Disposition of effects of insane soldiers after discharge—see Bull. 50 W. D. 1914.

498. Service records of patients. Whenever a soldier is detached from his company or other organization or station for treatment or observation by and under control of officers of the Medical Department, his company or other immediate commander will send his service record directly to the medical officer in charge of the hospital or other place to which the soldier is or has been sent.

499. Public property in possession of patients.

Patients will, if possible, leave their arms and accouterments with their companies.

(a) *Public property brought into the hospital by the patient will also be listed in duplicate on his property card, Form 75. If his disability is so slight as to require treatment for a few days only, the property will be kept intact, tagged, and restored to him upon his return to duty, taking his receipt therefor; otherwise it will, if practicable, be turned over to his commanding officer, whose receipt should be obtained. If such transfer is not practicable, the following action*

will be had: (1) The medical officer will take upon his return the medical property in the soldier's possession and forward his receipt therefor to the accountable officer; (2) if the medical officer is accountable for quartermaster or ordnance property, he will take up on his quartermaster or ordnance papers all property belonging to those departments brought in by the patient; otherwise he will transfer such property to the nearest representative of those departments, whose receipts therefor should be obtained; (3) the patient's commanding officer will be immediately notified by mail of the action taken under (1) and (2).

(b) *Hospital clothing* will be worn by patients only during their stay in hospital. Each article will be marked as hospital property. When very sick soldiers are transferred from one hospital to another the hospital clothing may be sent with them, properly invoiced, and accompanied by a check list, giving the names of the men in whose possession it is. Under the provisions of this paragraph, crutches and similar articles named, if necessary, may be similarly transferred with the patient from one post or hospital to another with usual invoices and receipts.

Upon the discharge from service of men permanently disabled, they may retain the surgical appliances then in their use which are necessary for their comfort and safety, and the accountable officer will drop the same from his next return of medical property, submitting a certificate explaining the circumstances as a voucher for so doing.

(c) *Treatment of Infected Property:*

Tents, clothing, hospital furniture, and other stores used in the treatment of contagious diseases will be disinfected or burned upon the recommendation and under the supervision of a medical officer.

(d) *Replacement of infected property when destroyed:*

The Secretary of War may, on the recommendation of the Surgeon General, order gratuitous issues of clothing to soldiers who have had contagious diseases and to hospital attendants who have nursed them, to replace articles destroyed by order of the proper medical officer to prevent contagion.

(e) *Caution:* Infected articles which can be disinfected without material injury, should not be burned. Articles destroyed to prevent contagion must be accounted for by the affidavit of the officer responsible setting forth fully the circumstances necessitating such destruction.

HOSPITAL FUND (M. M. D. 248.)

500. Sources:

(1) Commutation of rations of patients and members of the Nurse Corps. When not sufficient for the purchase of suitable food, the surgeon should make application through military channels to The Adjutant General of the Army for the issue of rations in kind.

(2) Savings on rations of the enlisted force of the Medical Department.

(3) Dividends from Post Exchange.

(4) Dividends from post garden.

(5) Money received for the subsistence of officers and civilians treated in hospital.

(6) Sales of property purchased with hospital fund, or products pertaining to the hospital fund (vegetables from hospital garden, etc.).

(7) The amount turned over to the surgeon for the sick in hospital by the exchange council (see Post Exchange Regulations).

Note: The cost of subsistence furnished seamen of the Army Transport Service will be reimbursed the hospital fund out of the medical and hospital appropriation.

Freight charges on hospital supplies purchased from the hospital fund chargeable to the hospital fund. Bull. 30, W. D. 1915.

(a) *Custodian of:*

The surgeon of a post or command, or the commanding officer of a general hospital or other sanitary formation or a commissioned assistant, when especially authorized by the Surgeon General, will keep, account for, and expend the hospital fund according to the instructions from the Surgeon General exclusively for the benefit of the sick in hospital and of the enlisted men of the Medical Department and members of the Nurse Corps on duty therein.

(b) *Accountability:*

The custodian will be held to a personal accountability for the loss of any portion of the hospital fund not deposited and locked in the hospital safe or deposited in a bank.

(c) *Nature and use:*

The hospital fund is regarded as a company fund, and is applicable generally to similar purposes, in the interest of enlisted men of the Medical Department, the sick under treatment and members of the Nurse Corps on duty in military hospitals.

(d) *Management:*

The officer commanding the hospital will see that due economy in expending the fund is observed, and that expenditures are not made for improper purposes. Receipts will be taken for all payments.

(e) *Gratuities to hospital cooks, assistant cooks and hospital gardener* (not to exceed \$100.00 per month) may be authorized by department surgeon or the Surgeon General when the amount of the hospital fund on hand justifies such expenditure.

(Vouchers for gratuities will cite upon their face their date and the source of the authority for paying them.)

(f) *Forbidden expenditures:*

The purchase from the hospital fund of alcoholic liquors, except for the use of the sick in hospital, is prohibited.

(g) *Transfer of hospital fund to other hospitals:*

When any part of a detachment of the Medical Department leaves its post in command of a medical officer for service in the field the surgeon of the post may turn over to such officer an equitable proportion of the hospital fund on hand for the use of the detachment taking the field.

Necessary transfer of the hospital fund from one post to another in the department may be authorized by the department surgeon, but transfers of funds from one department to another, except as provided in the first part of this paragraph, will be made by order of the Surgeon General only.

(h) *Purchase of durable articles:*

Articles of durable property purchased with the hospital fund will be kept for the benefit of the sick, the enlisted men of the Medical Department, and the members of the Nurse Corps by the officer charged with the custody of the fund. When the same become worn out or unfit for use they may be dropped, destroyed, or sold by authority of the department surgeon or the Surgeon General. Applications for authority to drop, destroy, or sell durable articles should recite their exact condition and the length of time they have been in use. The proceeds of sales of such property revert to the hospital fund.

(i) *Transfer of durable articles belonging to fund:*

Is made from one custodian to his successor simply by receipt of the new custodian by entry over his signature across the former custodian's final hospital fund return.

(j) *Audit of:*

The hospital fund will be audited by the hospital council at the end of every month and when the custodian is relieved from its custody.

(k) *Statement:*

Within five days after its audit the custodian will forward a statement of the fund and return of durable property on Form 49 to the department surgeon or in the case of a post or command under the immediate supervision of the War Department to the Surgeon General, accompanied by the prescribed vouchers.

The department surgeon will take such action on the statement and return as he may deem appropriate, and will in due season forward it with his approval or comment to the Surgeon General. If the department surgeon approves it he will return the vouchers to the hospital for file. If he does not approve, he will forward all papers to the Surgeon General.

(m) *Record:*

A duplicate of each statement and return will be filed with the retained records of the hospital and will constitute the council book of the hospital council, the proceedings of which will be recorded therein as prescribed by paragraph 318 Army Regulations. When necessary, extra sheets will be inserted for the record of the proceedings of the hospital council.

Ice for hospitals is obtained from the Quartermaster Corps, see paragraphs 263 and 264, M. M. D.

501. Hospital charges.

Note: Hospital charges at the Army and Navy General Hospital, Hot Springs, Ark., and at the General Hospital at Fort Bayard, N. M.,

are governed by special regulations made from time to time. See A. R. 1460.

(a) *At Post and General Hospitals.*

Subsistence charges for patients in other Army hospitals, except field hospitals, will be as follows: for retired men of the Army, Navy and Marine Corps, for enlisted men of the Navy and Marine Corps and for civilians on the footing of enlisted men, 40 cents a day; for officers of the Army, \$1.00 a day; for officers of the Navy, including warrant officers, and of the Marine Corps, and for civilians on the footing of officers, \$1.25 a day. (A. R. 1460.)

(b) *In Alaska.*

When necessary to protect the hospital funds at posts in Alaska against actual loss the post commanders may prescribe an additional charge for each such patient not to exceed \$.25 a day. The money received for subsistence charges will be accounted for with the hospital fund.

(c) *A medicine charge* of 25 cents a days will be made for all patients in Army hospitals who are not entitled to medical care and treatment at the cost of Army appropriations, including officers and enlisted men of the Navy and Marine Corps, civilian employees and civilians, the money received therefor to be deposited in the Treasury of the United States to the credit of the proper appropriations and to be accounted for in due form accordingly.

Note: The surgeon will determine in each case, subject to instructions from higher authority, whether civilian patients shall be on the footing of enlisted men or of officers. (A. R. 1460.)

(d) *In Field Hospitals.*

Charges for the above classes will be 30 cents a day, 50 cents a day, and 60 cents a day, respectively, and for officers and enlisted men of the Organized Militia admitted to field hospitals of the Army under paragraph 1481, A. R. at the rate of 50 cents a day and 30 cents a day, respectively, to be accounted for with the hospital funds and medicine charges at the rate of 25 cents a day to be deposited to the credit of the proper appropriations.

(e) *Of National Guard.* The subsistence charges for enlisted men and the medicine charges for officers and enlisted men will constitute charges against the allotments, under section 1661, Revised Statutes, to the state, territory, or District of Columbia, to the militia of which the patients, respectively, belong.

The cost of subsistence will be reimbursed to the hospital fund out of the Medical and Hospital appropriations.

(f) *Vouchers* adapted to the facts in each case and stated in favor of the hospital fund as follows, on Form 330, W. D., will be forwarded from time to time for the action of the department surgeon:

For subsistence of John Doe, a civilian employee of the U. S. A. T. Sherman, while under treatment in ——— hospital, ———, January 1 to 11, 1913, on the footing of an enlisted man, 11 days, at 40 cents a day.

Above-named man had signed the usual shipping articles for a voyage, entitling him to medical care when sick, and his term of service had not expired prior to the last date for which subsistence is charged in the account.

Payment by authority of the Secretary of War, June 1, 1912. (1906208, A. G. O.—141964, S. G. O.).

The certificate to the correctness of the bill will be signed in the name of the hospital fund (designating the hospital to which it pertains) by the custodian thereof who will sign his own name, with rank and designation as custodian.

The certificate that the articles have been received, etc., will be signed by the Transport Quartermaster, and the statement will be added that the "above-named patient was sent to the — Hospital by proper authority."

(g) *When Due for Payment.*

Officers and civilian employees of the Army should pay their indebtedness for hospital charges before leaving the hospital, or promptly at the end of every month if they then continue in the hospital.

(h) *When unpaid.*

If the hospital charges against an officer are not paid by the fifth day of the month immediately following that in which they were incurred, the commanding officer of the hospital will forward a statement of the indebtedness through military channels, to the Surgeon General, for the action required by paragraph 1308, Army Regulations.

Note: A civilian employee who is unable to pay his hospital charges at the prescribed time will give a certificate of his indebtedness, in triplicate, on Form 49 A, Medical Department (marking one number "Original," one "Duplicate," and the third "Triplicate"), to the commanding officer of the hospital, who will designate by indorsement thereon the officer to whom the amount of the indebtedness should be remitted, and will forward the original and duplicate at once through proper channels to the officer under whom the employee is serving, retaining the triplicate for his own file. The employing officer will refer the certificate to the paymaster or disbursing officer who is to pay the employee and such paymaster or disbursing officer will deduct the amount of the indebtedness from the pay due, and will remit the amount so deducted to the officer designated to receive it. When an employee who is indebted for hospital charges dies before the indebtedness is settled, the commanding officer of the hospital will prepare an account thereof in duplicate certifying the same to be correct and will forward one number to the employing officer for his information and guidance, and the second number, through the Surgeon General, to the Auditor for the War Department, retaining a copy for his own file. Should a certificate of the indebtedness have been given previously all the numbers thereof will be assembled and forwarded with the account for the Auditor. Ordinarily the commanding officer of the hospital where the employee was cared for will

be designated as the officer who is to receive the amount of the indebtedness. But when the hospital is about to be or has been closed the Chief Surgeon having jurisdiction over it should be designated to receive the remittance or if the field army or independent division, or the territorial division or department, under which the charges were incurred, is about to be or has been disbanded or discontinued, then the Surgeon General should be so designated. The Surgeon General should also be designated to receive remittances for hospital service rendered in general hospitals which have been or are about to be closed.

See employees' compensation law.

502. The hospital mess.

The provisions of Army Regulations relating to company messes will be applied as far as they are adaptable to hospital messes.

The mess sergeant under the commanding officer of the hospital will manage the mess.

(a) *The mess account* (Form 74 M. D.). The mess account must be carefully and accurately kept, so that it will show the receipts and expenditures for each day.

(b) *The mess sergeant*. He makes purchases, safeguards and issues subsistence stores under the direction of the commanding officer of the hospital. He is responsible for the care and handling, cleanliness and preparation of the food and the cleanliness of the kitchen, mess rooms and all utensils, and the personal hygiene of the cooks and the cooks' police.

(c) Diet kitchens and separate messes may be maintained each with its own equipment, personnel and mess account under the commanding officer of the hospital.

(d) *Articles of subsistence* are obtained from the Quartermaster on ration returns made out for one month or portions of a month in advance or purchased in open market (See A. R. 1219 et seq), from the hospital fund or raised in the hospital garden. The difference in money between the value of the rations due and the value of the rations drawn constitute an income or an expense for the hospital fund.

503. **Diets.** Each ward surgeon will, every morning, immediately after the first round of his ward, fill out a diet card, Form 73, M. D., covering the diet requirements of his patients for the ensuing 24 hours. Bills of fare for regular, light, and liquid diet should be made out and posted in the wards and kitchens. Additional articles not included in these diets are to be ordered for special cases only.

(a) The diet card from the ward will be sent promptly to the hospital office, where the necessary card or cards will be made out covering the meals of the hospital personnel. All the cards will thereupon be turned over to the noncommissioned officer in charge of the mess in season for his action towards the preparation of the day's dinner.

(b) Additional cards for newly admitted patients or newly arrived personnel will be made out promptly when necessary and sent to the

noncommissioned officer in charge of the mess without delay. The diet cards may be destroyed after they have served their purpose; usually they will have no value beyond the day of their date and the following day.

DISPENSARY MANAGEMENT

504. Prescriptions will be written in the metric system, placed on file in three separate files, as follows: (1) prescriptions for alcohol or alcoholic liquors and for medicines containing opium or any of the salts, derivative, or preparations of opium or coca leaves. (2) Prescriptions for civilians which do not include articles of the preceding class. (3) All other prescriptions. Prescription files will be subject to inspection by inspectors and post commanders at all times.

(a) In connection with file (1) a record will be kept of the dispensary receipts and expenditures of each article specified therein. Unless otherwise authorized by the Surgeon General, this record will be made on blanks of Form 17a, adapted as may be necessary to the purpose. A separate slip will be kept for each form in which the liquor or drug is supplied, as "Morphinae sulphas, powder" or "Morphinae sulphas, 10—mgm. hypo. tablets." The date of receipt thereof from the storeroom will be noted in the left hand column and the amount, in the proper metric unit, in the debit column. The expenditures will be noted by entering the prescription number in the left-hand column and the amount expended in compounding the prescription in the credit column. At least once a month the slips will be balanced and the quantities remaining on hand will be verified by a medical officer and the facts noted over his signature.

505. Active poisons, alcohol, alcoholic liquors, and all habit forming drugs will be kept under lock and key in separate closet.

506. Civilian employees of the Army stationed at military posts *may purchase medical supplies* when prescribed by a medical officer.

(a) Medicine charges for employees not in hospital will be as follows: In ordinary cases, 25 cents per each prescription; in cases of rare and expensive medicine, dressings, appliances, etc., at such increased rate, to be determined by the surgeon, as will reimburse the United States their cost.

(b) *Medicine charges for civilian employees in hospital* are fixed at 25 cents a day in Army Regulations.

(a) The responsible officer will at the end of each month, without delay deposit the net amount collected during the month with the nearest United States Depository, to the credit of the Treasurer of the United States under the special fund "Replacing Medical Supplies" for the proper two-year period or periods. (See M. M. D. 510.) (The net amount collected is the gross amount collected; less the expenses of deposit, if any, such as the cost of a money order to make remittance to a depository at a distance.)

(b) The responsible officer will notify the Surgeon General by letter direct that he has done so, stating expressly the source from which the money arose, to wit, "Proceeds of sales of medicines to

civilians," and specifying not only the period during which the proceeds were collected but also the inclusive dates during which the sales were made, i. e., during which the medicines were furnished. If the collections during any month cover medicines furnished during part of two fiscal years (as, for example, collections during July for medicines furnished during June and July), the notification will show clearly how much of the amount deposited was for medicines furnished in each of the two years.

(The proceeds of the sales will be accounted for in the manner required by M. M. D. 509a.)

507. Gratuitous issues permitted. At isolated posts where issues to civilians become necessary to save life or prevent extreme suffering a report of the circumstances will be made to the Surgeon General (or in the Philippine Department to the Department Surgeon). Unless the patient is destitute, charges will be made and the proceeds disposed of and accounted for as in the case of employees.

HOSPITAL SAFE

508. Knowledge of the combination of the lock of the hospital safe will be guarded with the utmost care. Any change in the combination will be immediately reported by confidential letter direct to the Surgeon General, or in the Philippine Department direct to the Department Surgeon, identifying the safe by its make and number.

HOSPITAL LAUNDRY WORK

509. The hospital laundry comprises: First, the linen, clothing, and bedding belonging to the Medical Department, as above enumerated; second, the washable clothing of patients admitted to hospital, which requires cleansing before it can be put away (M. M. D. 222); third, the white coats and trousers of the enlisted attendants (par. 47a); fourth, the uniforms (M. M. D. 93) of the Nurse Corps soiled while on public duty.

510. Laundry work done by matrons.

(a) The duty of the hospital matron (M. M. D. 266) to mend and keep in repair the table, hand, and operating linen, the bedding and the hospital clothing belonging to the Medical Department, including the linen of the dental office, and to do the hospital laundry, or so much thereof as possible up to a minimum of 500 pieces per month, from time to time as the same may be required by the surgeon.

(b) In case of the matrons on duty at the larger posts and at general hospitals the Surgeon General may modify or waive so much of this provision as requires the laundering of a minimum of 500 pieces of hospital linen a month in addition to all the mending.

511. Circumstances when laundry work is not done by matrons.

(a) When the number of pieces to be laundered is more than the matron can do (having in mind the minimum of 500 pieces a month above required) the excess may be given to laundries.

(b) When it would be an economy and advantage to put the entire laundry out instead of the excess only, the fact should be

reported to the department surgeon for his information with a view to obtaining the necessary instructions and authority for further action. (For the purpose of this report the matron's total compensation, including pay and allowances, is regarded as equivalent to 18 dollars a month, of which three dollars is for mending, and the balance, 15 dollars, for the laundering.)

Exceptions.

Hospitals with laundry plants or otherwise provided for under special instructions from the Surgeon General.

512. Bids for laundry work.

When competition is not had the responsible officer will ascertain the lowest prices current in the vicinity for good hand or machine work and govern his action accordingly.

513. Employment of individual laundrymen and laundresses.

Authorized without advertising for proposals, provided they do the work in person the same being regarded as personal services within the meaning of section 3709, Revised Statutes. The vouchers will bear a notation showing that the work was done by the creditor in person.

514. Laundry work by steam laundries, or corporations, firms, or individuals who do a general laundry business, the actual work being done by employees of such laundries, corporations, etc., may be engaged in open market.

515. Official information concerning patients.

(a) No information will be furnished by any person in the military service which can be made the basis of a claim against the Government, except it be given as the regulations prescribe through the proper officers of the War, Treasury, or Interior Departments, or the Department of Justice. Information concerning sick and wounded officers and enlisted men may be freely conveyed to allay the anxiety of friends; and, in time of peace, when, in the opinion of the surgeon, the condition of an officer or enlisted man, by reason of injury or disease, is such as to indicate the probability of fatal termination, the surgeon will report the circumstances to the immediate commander, who will promptly communicate the fact to the nearest relative. The fact of death may be communicated to relatives, but not circumstances connected therewith which could be made use of in prosecuting claims against the Government. If any person in the military service has knowledge of acts pertaining to the service of an individual who is an applicant for a pension, he may, upon request, if not pecuniarily interested, furnish a certificate or affidavit setting forth his knowledge, but such certificate or affidavit will be furnished only to the Adjutant General of the Army to be forwarded to the proper officer of the Interior Department. Record evidence will be furnished by the War Department only.

(b) Soliciting of Pension claims in General Hospitals prohibited.

(c) Special examiners of the Bureau of Pensions upon presentation of proper credentials to the commanding officer may make investigations of pension claims in military hospitals.

(d) The examination will be restricted to personal interview and no reference to official records will be permitted.

(e) It will be the duty of commanders of hospitals, to afford to chaplains, such facilities as may aid them in the performance of their duties.

516. Use of medical property. Medical officers in charge of hospital property will not permit it to be used for other than hospital purposes.

517. Free issue of medicines.

Medicines are dispensed to all those entitled to medical attendance. Any Army dispensary will fill prescriptions of medical officers for officers and enlisted men on the retired list.

518. Free issue of hospital stores.

Hospital stores are dispensed to officers (only at posts or stations where they cannot be purchased), enlisted men, members of Army Nurse Corps, and hospital matrons.

519. Sales and issues of medicines to civilians.

Civilian employees at military posts, including the employees of Post Exchanges, may be furnished the medical supplies prescribed for them by a medical officer under such regulations as the Surgeon General may establish in accordance with law, to wit:

(a) Medicine charges for employees not in hospital will be in *ordinary cases 25 cents* for each prescription; in the case of *rare and expensive medicines, hospital stores, dressings, appliances, etc., at such increased rate to be determined by the surgeon*, as will reimburse the United States for their cost.

(b) *Medicine charges for civilian employees in hospital* are fixed at 25 cents a day in Army Regulations.

(c) At isolated posts where issues to civilians become necessary to save life or prevent extreme suffering, medical officers will make such issues, and at the end of each month will report the circumstances to the Surgeon General, or in the Philippines Division to the Chief Surgeon. Unless the patient is destitute charges will be made and the proceeds disposed of and accounted for as in the case of employees.

MEDICAL ATTENDANCE

520. Medical attendance furnished by:

Officers of the Medical Corps, Officers of the Reserve Corps when on active duty with troops, the Dental Corps, physicians under contract and civilian physicians as authorized.

521. Those entitled to medical attendance are:

(a) Officers, enlisted men, contract surgeons, members of the Army Nurse Corps, prisoners of war and all others in military custody, and applicants for enlistment while under observation.

Note: Officers sick in quarters will be seen by a medical officer at least once a day and at their quarters if unable to visit the hospital office.

(b) Civilian employees when at stations or in the field where other medical attendance cannot be procured.

Note: Employees of the Post Exchanges are entitled to same privilege.

(c) Families of officers and enlisted men *when practicable*.

Note: Families include wife, minor children, and other dependent members of the household including servants.

(d) Retired officers and enlisted men but cannot require medical officers to leave their stations for this purpose.

Note: In large cities by attending surgeons.

(e) Seamen in the Army Transport Service who have signed shipping articles entitling them to medical treatment at the cost of the United States, and have been placed in hospital by proper authority are entitled to subsistence, medicines, and medical attendance while in hospital by authority of Secretary of War, June 1, 1912. (G. O. 48, 1908) (See Regulations U. S. A. T. S.)

522. Sick Call. At sick call the enlisted men of each company that require medical attention will be conducted to the hospital or infirmary by a noncommissioned officer, who will give to the attending medical officer the company sick report book containing the names of the sick. The medical officer, after examination, will indicate in the book, opposite their names, the men who are to be admitted to hospital, and those to be returned to quarters, noting what duties the latter can perform and any other information in regard to the sick which he may have to communicate to the company commander. The senior medical officer of every command (except independent medical units) promptly after sick call each morning will forward to the adjutant a report of the sick of the command on the prescribed form furnished by the Surgeon General. After the report has served its purpose at headquarters of the command the adjutant will enter in the proper column the strength of the command for the day, present and absent, and return the report to the medical officer. Complete morning reports of sick will be preserved for a period of one year, unless the command is sooner discontinued, when they will be destroyed.

(a) *Purpose of sick call.*

Sick call is not a suitable time for the careful examination and treatment of the sick. Its purpose is to determine as expeditiously as possible the number of men unfit for duty so that the morning report of sick may be properly sent to the commanding officer.

The surgeon will make such memoranda at sick call as he may deem necessary for his further action in preparing his morning report of sick.

Register cards will also be started at once for all cases to go on the Register.

Note: Information concerning patients. Medical officers will furnish company commanders any information, except a diagnosis, which will assist them in determining, for entry on the muster rolls, whether or not the disability of a soldier who is or has been on

sick report originated in the line of duty, entering this information in the company sick report book. When required they will furnish the diagnosis to the commanding officer.

(b) When an officer or enlisted man is excused from duty on account of disease resulting from the intemperate use of drugs or alcoholic liquors, or because of incapacity resulting from venereal disease not contracted in the line of duty, that fact will be indicated by the medical officer marking the daily sick report (Form 339, A. G. O.), "No; G. O. 31, 1912," in the column headed "In line of Duty," if the misconduct herein is such as arises during the soldier's service and does not include misconduct occurring prior to entry into the service or prior to the passage of the Act of August 24, 1912, and "No; G. O. 45, 1914" in the column headed "In Line of Duty" if the cause of disease occurred after April 27, 1914.

(c) If it occurred prior to enlistment the entry is only not in line of duty, if after enlistment and prior to August 24, 1912, not in line of duty, if after enlistment and after August 24, 1912, but before April 27, 1914, add G. O. 31, 1912, if after April 27, 1914, G. O. 45, 1914.

523. Treatment in civil hospitals or by civilian service.

(a)

{ For those entitled at government expense }	see "Service
{ For those entitled at personal expense }	of Hospitals
	and General
	Hospitals."

When medical treatment, including medicine, nursing, and hospital care, cannot otherwise be had, the commanding officer may employ the necessary civilian service. (A. R. 1476.)

(b) For an officer, an enlisted man, a contract surgeon, or any Army Nurse, *on duty* with any command or detachment, by a prisoner in military custody or by an applicant for enlistment held under observation, or when the officer, the contract surgeon, the dental surgeon, or the nurse who requires such treatment is *on duty without troops*, or the enlisted man is on duty where there is no officer, he or she may arrange for the required service or by the Superintendent of the Nurse Corps *while on duty* she may in like manner procure the necessary civilian service.

Note: Enlisted men sick at recruiting stations, except those with trivial disabilities or those with severer injuries which render their removal impracticable, will be sent by the recruiting officer for treatment to the nearest military hospital. (A. R. 1475.)

524. Just accounts for civilian service will be paid by the Medical Department by disbursing officers only except when otherwise absolutely necessary. (A. R. 1477.) (A. R. 1476-1483, C. A. R. 39.)

Accounts for medical care and treatment arising among troops under the immediate supervision of the War Department will be forwarded directly to the Surgeon General; those arising among departmental troops or the troops of a mobilized division, to the department or division surgeon. Accounts for continuous service will be rendered monthly; those for temporary service, promptly upon the completion of such service. Blank forms may be obtained from

the Surgeon General on application. Separate forms are provided for physicians' bills, medicine bills, hospital bills, special nursing bills, and reimbursement claims. The account will in each case be stated on Form 377, W. D. for reimbursement of medical bills, Form 353, W. D. medical attendance, and Form 352 W. D. for purchase of medicines or prescriptions.

525. The compensation allowed to civilian physicians.

(a) *For ordinary medical attendance on public account at garrisoned posts or camps* will not exceed the following rates, and if the local charge per visit is less, the account will be rendered at the local rates: For attending post or sick call, five patients or less, \$2.50; for each patient in excess of five, 50 cents; for each additional visit to post or sick call on the same day, when necessary \$2. Where there is a large sick report and the service will be required for an extended period, application will be made to the Surgeon General for authority to employ a physician by the month. Accounts arising at posts or camps under exceptional circumstances, all accounts arising at other places, and accounts for special or surgical services will be allowed at reasonable rates approved by the Surgeon General. (A. R. 1479, 1484, 1485.)

(b) *For the physical examination of applicants for enlistment* (when authorized by regulations or orders) will be at the following rates: one recruit, \$1.00; 2 recruits on the same day \$1.50; 3 recruits on the same day \$2.00; 4 recruits on the same day \$2.50; for each recruit over 4 examined on any one day 40 cents. A physician employed at different recruiting stations will be allowed the above rates in full for the examinations at each station. He will also be allowed 50 cents for each authorized vaccination. (A. R. 1848, C. A. R. 39.)

(c) *For the physical examination or vaccination of enlisted men* (when authorized by regulations or orders from competent authority) will be at the same rates prescribed for examination and vaccination of recruits. (A. R. 1485.)

Accounts are rendered by civilian physicians for physical examinations and vaccinations of recruits on Form 354 W. D.

526. Accounts of special nurses. (A. R. 1482, C. A. R. 39.)

Compensation of special nurses may be allowed at reasonable rates approved by the Surgeon General, not however, exceeding the rates customary in the vicinity for services of similar character.

Accounts for nursing by civilian nurses are rendered on Form 356 W. D.

527. Accounts for surgical appliances.

Surgical appliances will be paid for only upon satisfactory evidence of their necessity; and such evidence, except in cases of emergency, should be submitted to the Surgeon General for his approval before purchase. Accounts for hospital stores will be paid only for enlisted men.

528. Accounts for medical treatment not payable from Public Funds. (A. R. 1476.)

1. For the medical treatment of officers, enlisted men, contract surgeons, dental surgeons, the Superintendent of the Nurse Corps and nurses absent from duty.

2. Of the families and servants of officers and men.

3. Accounts for consultation.

4. Treatment of chronic complaints by a specialist unless authority to employ such specialist has been obtained from the Surgeon General.

5. Accounts for hospital stores (except for enlisted men).

6. Medical attendance to soldiers on pass (Bull. 20, 1914) is not allowed.

529. Osteopathic treatment not medical treatment for which reimbursement may be claimed under 1476 A. R. Persons in the Army Service who require the services of a civilian physician at public expense are limited to the procurement of a physician whose methods of treatment are properly termed the practice of medicine and surgery. (Bull. 26, 1915.)

530. Civilian physicians practicing on military reservations. (M. M. D. 348, 349.)

A civilian physician desiring to practice medicine on a military reservation must register his name with the post commander and must agree, in writing, to observe the rules and regulations relative to the protection of the command against infective or epidemic diseases that may be in force at that time or that may be promulgated thereafter. (Par. II Cir. 26, 1907, in M. M. D. 348.)

(a) Whenever a civilian physician is summoned to take charge of a case of disease of an officer or an enlisted man at any garrisoned post or in the families of officers, enlisted men, or civilian employees thereat, the patient or responsible person will at the same time so inform the commanding officer, who will notify the post surgeon. It will thereupon be the duty of the surgeon to ascertain, if possible, from the attending physician or by personal examination of the patient if deemed necessary, the nature of the disease and, if it proves to be infectious and a source of danger to the garrison, he will retain supervision of the case and be responsible for all measures of isolation, prevention and disinfection. If an officer or enlisted man be the patient it will be the duty of the surgeon in any case to report the nature of the disease to the post commander in order that the latter may, if the interest of the service demand it, require the patient to be placed under charge of the post surgeon.

(b) Any violation of this order by a civilian resident will subject him to removal from the post. (G. O. 160, 1905 in M. M. D. 349.)

531. Post hospitals. Post hospitals are maintained at garrisoned posts and in the man each receives patients only from the garrison to which it belongs. They are *commanded* by the Post Surgeon and *in time of war* may be augmented to meet conditions.

(a) *Personnel of:* according to the size of the garrison.

(b) *Management:* The senior surgeon is charged with the management and is responsible for the condition of the hospital, which will

be at all times subject to inspection by the commanding officer. The senior surgeon of the post will inspect the hospital every morning, and on Saturday will also inspect the detachment of the Hospital Corps.

(c) The surgeon of the post will assign his assistants and the members of the Hospital Corps to duty, and report them on the muster rolls in the capacity in which they are serving. With the approval of the commanding officer he will also appoint the matrons.

532. General hospitals. (a) The permanent general hospitals of the U. S. Army, are

The Letterman, U. S. Army General Hospital
Presidio of San Francisco, Cal.

The Walter Reed, U. S. Army General Hospital
Tacoma Park, Washington, D. C.

The Philipines, U. S. Army General Hospital
Manila, P. I.

The U. S. Army General Hospital at Fort Bayard, New Mex.

The Army and Navy General Hospital, Hot Springs, Ark.

Temporary general hospitals are established as needed in the time of war by the Surgeon General. Mobilization camps are supplied with base hospitals. *General Hospitals are administered* according to the regulations for the government of the U. S. Army General Hospitals, published by the War Department from the office of the Surgeon General in 1914; by regulations in the Manual for the Medical Department Par. 283 to 316, and in Army Regulations Par. 1447 to 1463 inc.

533. Special regulations for specialized general hospitals.

(a) For the General Hospital at Fort Bayard are to be found in Par. 334 to 344 inc., Manual for the Medical Department; Par. 1445, 1446 Army Regulations.

(b) For the Army and Navy General Hospital, Hot Springs, Arkansas, are to be found in Par. 317 to 333 inc., Manual for the Medical Department, and Par. 1441 to 1444 inc., Army Regulations.

The Government Hospital for the Insane, in the District of Columbia, is governed by the regulations of Congress, see Par. 464 to 470 Army Regulations and Par. 216 Manual for the Medical Department.

(Scheme for examination of Insane. Cir. 12, Surgeon General's Office, 1913.)

534. Mobilization camps (M. M. D. 832) and cantonments.

(a) *Definition.*

A mobilization camp is a place, in the territory from which the troops are drawn, where they are assembled to be raised to war strength, equipped, and prepared for service. (F. S. R. 253.) It is under the command of the Division Commander who reports to the War Department directly.

(b) *For Regular Army.*

The mobilization of the Regular Army will be effected at their permanent stations. Recruits, after being armed, equipped, and trained at the recruit depots, will be forwarded to their respective organizations. (F. S. R. 253.)

(c) *For National Guard and National Army.*

The mobilization of the organized militia will be effected at mobilization camps (F. S. R. 253 and A. R. 452), of National Army at cantonments. G. O. 95, 1917.

(d) *Mobilization Orders.*

The general instructions relative to mobilization are published in regulations or in War Department orders. (F. S. R. 253.)

Note: Department commanders are responsible that all mobilization camps are supplied with camp supply depots and will have their requisitions.

The work of the Medical Department at these camps is supervised by the Surgeon General. (M. M. D. 832.)

(e) *The Camp Surgeon.*

So far as practicable will be an officer of the Medical Corps. (M. M. D. 593.)

535. The camp sanitary service is under the direction of the senior medical officer on the staff of the camp commander, who will be designated camp surgeon.

536. Objects to be obtained by the Medical Department (M. M. D. 594.)

1. Selection and Sanitation of the camp site.

2. To make the physical examinations (see physical examinations) (in accordance with instructions from the War Department):

(a) Of the condition of officers and men upon their admission to the Federal service and to secure accurate records as prescribed in Army Regulations.

(b) Of civilians attached to troops and to exclude those who are unfit for the contemplated service.

3. To administer prophylactic vaccinations. A record of these vaccinations will be kept as prescribed in paragraphs 187, 188 and 193, M. M. D.

4. To equip all individuals and organizations with such articles of Medical Department property as are required by existing orders.

5. To completely equip all individuals and organizations pertaining to the Medical Department.

6. To instruct all individuals and organizations so far as practicable in personal hygiene and camp sanitation.

7. To instruct Medical Department personnel, commissioned and enlisted, in the routine work of the Medical Department in the field.

Note: An important factor in the instruction will be the object lesson afforded by the administration of the camp and the measures

inaugurated for the maintenance of sanitary conditions therein. This instruction will be carried out under the immediate supervision of the camp surgeon. It will be systematically arranged and will follow a definite program.

537. Correspondence and reports from sanitary organizations.

All letters and reports to the division surgeon, or the Surgeon General will be forwarded through the camp surgeon in order that they may be returned to the writer for correction, if necessary.

538. Sick call.

The camp surgeon will provide a suitable place in which the medical personnel attached to organizations may hold sick call and will furnish the necessary supplies for the treatment of the sick.

Note: *Supplies and equipment in the hands of sanitary organizations temporarily at:*—will be maintained intact, being used only for purposes of drill and instruction.

(a) When for any reason it is impracticable to fully prepare individuals and organizations for service at the front, so far as this preparation devolves upon the Medical Department, the camp surgeon will furnish a full report to the department surgeon showing what remains to be done in order that the latter may take the necessary steps to have the preparation of such individuals and organizations completed at the camp of concentration.

CAMP HOSPITALS

539. Character.

A camp hospital is an immobile unit under the control of the camp surgeon for the care of the sick in camps to prevent the immobilization of sanitary organizations pertaining to organizations.

Division surgeons and others will prevent the immobilization of sanitary formations pertaining to organizations by providing them camp hospitals.

540. The equipment and personnel. These are supplied without requisition.

For one or two regiments they may be formed with a regimental hospital equipment, less transportation, as a nucleus. For a brigade or larger organization they may utilize the equipment of a field hospital as a nucleus. In M. M. D. 886 will be found a list of supplemental supplies for the equipment of camp hospitals, more or less of which will be necessary according to the conditions which are to be met. At cantonments Base Hospitals will be supplied.

541. Department hospitals.

A department hospital is under the control of the commanding officer of the department in which it is situated. In all other respects its organization, administration, and function correspond to that of a general hospital.

542. The post surgeon. The senior medical officer of a post or recruit depot is called, "The Surgeon." (A. R. 206.)

(a) *Duties.*

See duties of medical officers. (Par. 141.)

He is on the staff of the post commander.

He commands the hospital, its personnel and patients, subject to the authority of the post commander, to whom his relations are analogous to those of a company commander.

He is responsible for the management and condition of the hospital which will be at all times subject to the inspection of the commanding officer. (A. R. 1447.)

He will determine what patients are to be admitted to the hospital, will assign them to wards or divisions according to convenience and the nature of their complaints, and will take proper measures for their care and treatment. By this prescription and under his direction convalescent patients may be employed to perform such light police duty in and about the hospital as may not be injurious to their health. He will decide when they are so far recovered as to be able to leave hospital and will return them to duty or to quarters accordingly. (M. M. D. 281a.)

He will be responsible for the care and preparation of the necessary hospital reports, registers, and records, as well as for all public property which may come into his possession; for the proper expenditure of supplies and funds; and for the preparation of requisitions, returns, and muster and pay rolls of the hospital. He will require a proper performance of duty by the entire hospital personnel and will make and enforce proper regulations as to the sanitary, disciplinary, and other requirements of the hospital. (M. M. D. 281b.)

He will present, for inspection to the commanding officer—ambulance, litters, and other field sanitary matériel at each monthly inspection and see that the equipment is complete and in serviceable condition. When practicable, the ambulance fully equipped for service, with the animals attached, and the pack mule carrying the sanitary equipment pertaining to the sanitary combat train, will be presented for inspection.

He will inspect the hospital every morning and on Saturday will also inspect the Detachment of the Sanitary Troops. (A. R. 1447.)

He will make frequent visits with the post commander, during the month, to the hospital, guardhouse, mess halls, mess rooms and other buildings and rooms used by enlisted men.

He will supervise the sanitation of his post and make a monthly sanitary report.

He will assign his assistants and the enlisted personnel of the Medical Department to duty.

He will report them on the muster rolls in the capacity in which serving.

He will appoint matrons with approval of commanding officer in numbers fixed by the Surgeon General.

He will keep on hand horse equipment furnished by the Ordnance Department for use of those members of the detachment Medical Department who are authorized in the Tables of Organizations to be mounted in war.

He has direct command of all enlisted men of the Medical Department (except prisoners) casually at his post.

He will keep accounts of pay and clothing of the enlisted men of the Medical Department of his detachment and carry prisoners who are enlisted men of the Medical Department on the muster rolls and returns of his detachment.

He instructs the enlisted men of his detachment in the duties pertaining to the sanitary soldier.

He instructs the troops of the command under the direction of the post commander in first aid, personal hygiene and sanitation.

He manages and is responsible for the hospital fund.

He may act as recruiting officer of the command when so designated by the post commander.

He will examine upon arrival at a post each recruit who has not undergone examination by a medical officer, contract surgeon, or civilian physician and will record defects, if any, with his opinion as to whether they existed prior to enlistment. A certificate of disability will be submitted if the recruit is disqualified for the service.

He will make or cause an assistant medical officer to make the physical examinations prescribed in regulations, for furlough to reserve, for sick leave, of alleged deserters, of men for transfer to other branches of the service or for special ratings.

He is authorized, through the commanding officer, to furnish to the health authorities of the State or locality in which the post is situated, in accordance with existing State laws or local ordinances, information concerning all births and deaths occurring in the post, such information to be given on the proper blanks furnished for the purpose by the State or local authorities. (A. R. 824.)

He will make the report called for by regulations and orders.

He will furnish property pertaining to the sanitary service, required by an organization temporarily detached from its station, to the senior medical officer accompanying the organization, on memorandum receipt.

CHAPTER X

SANITARY TACTICS IN THE THEATRE OF OPERATIONS

543. Service and division of theatre of operations. The service of the theatre of operations is carried on by the commander of the field forces. The theatre of operations is divided into two zones:

- I. The zone of the line of communication.
- II. The zone of the advance.

544. Assignment of troops in line of communication. On leaving the concentration camps in the zone of the interior, troops may be assigned to—the supply, sanitary and telegraphic service or service of military railways.

545. The chief surgeon of the field forces. He belongs to the technical and administrative group on the staff of the commander.

1. *Duties. During the period of grand tactical operations when a line of communications is in operation.*

(a) *Advisory.* He concerns himself with the broad principles underlying sanitary administration. His recommendations are such, that when promulgated by the commander, the details of the sanitary service will be left to subordinate commanders. He maintains no office of record. He may, however, direct that all or any of the Medical Department reports from the zone of the advance pass through the office of the surgeon, base group, before being forwarded to the War Department, in order that the information contained therein may be tabulated for his use or that the reports may be returned for correction.

(b) *Administrative.*

He administers directly only the sanitary personnel attached to headquarters.

He will keep the Surgeon General advised of the condition and efficiency of the sanitary service of the command.

He will take the necessary steps to insure coördination of the sanitary service of the zone of the advance and the zone of the line of communications, and to that end will keep continually in touch with the division surgeons and the surgeon, base group.

He will make recommendations relative to the adequacy of the table of maximum and minimum supplies to be maintained in the depots on the line of communications. (See M. M. D. 782.)

Upon the completion of the grand tactical operations and upon the discontinuance of an organized line of communications, or if no

line of communications has been organized, he assumes a more direct control of such Medical Department personnel, depots, hospitals, etc., as the War Department may place under the command of the officer upon whose staff he is serving.

He will maintain an office of record in so far as he is assigned the duties which devolve upon the surgeon, base group, when a line of communication is operated.

He will perform such duties pertaining to department surgeons as his office demands.

SANITARY TACTICS IN THE ZONE OF THE LINE OF COMMUNICATIONS

546. Function.

(a) To relieve the combatant forces of disabled personnel with celerity. This requires organization for transportation and hospital care.

(b) To replenish the losses in sanitary troops, sanitary supplies, sanitary equipment, in the zone of the advance.

(c) To furnish medical attention to the troops in the lines of communication.

(d) To retain patients with temporary disabilities and restore them when cured to their organizations.

(e) To facilitate the flow of chronically and permanently disabled to the zone of the interior.

(f) To institute sanitary and relief measures in occupied enemy territory.

547. General factors.

A line of communication is established for each important force to engage in the field operations involving a movement from a base. It embraces all territory from and including the base to the point or points where contact is made with the trains of the combatant field forces. The activities of the line of communications personnel are in general limited to this zone, except that sanitary columns will be pushed forward beyond this zone when necessary.

It is the function of the line of communications to extend its lines so as to make contact with the divisions in advance, and not the latter's function to extend back.

The line of communications will be within a short distance of the division or this distance may be greatly increased and for short periods of time all connection may be severed.

548. Zones of the line of communications.

1. A base group at a selected place.

2. An intermediate group where and when required.

3. An advance group at the head of each important route of supply diverging from the base.

(a) *Limitations of control.* The operations of each group extend up to, but do not include, the dépôts, sanitary units of the next in advance

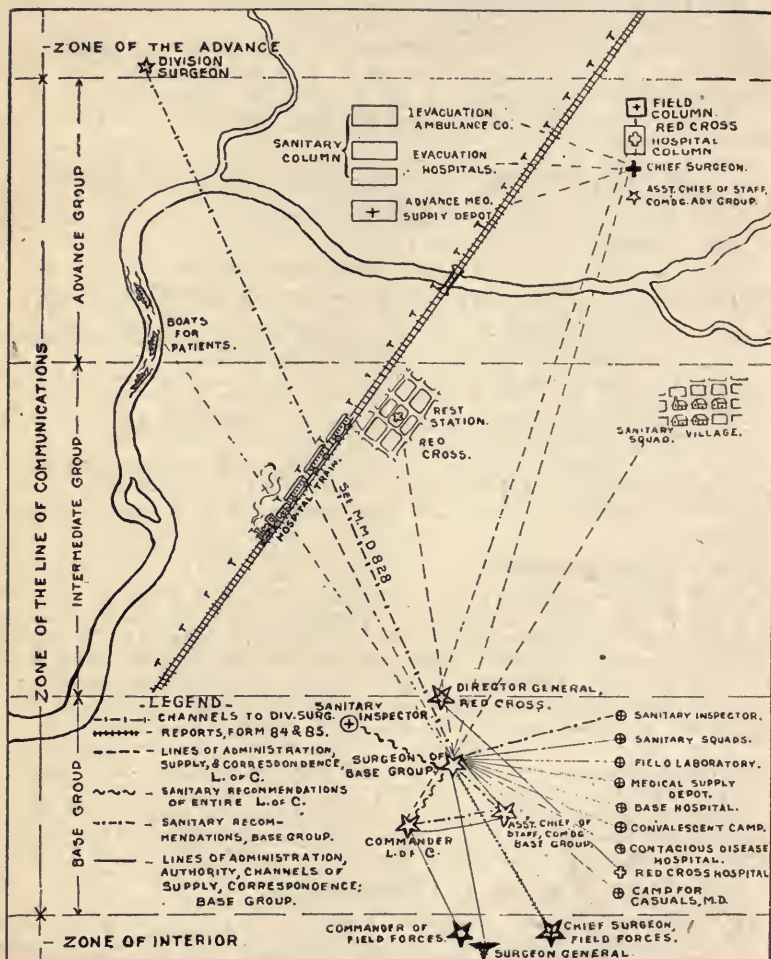


FIG. I

Each provides for the supply of the line of communication troops within its limits.

(b) *Property accountability.* In so far as possible accountability is terminated and replaced by a system of responsibility when supplies are turned over to troops or trains in the zone of the advance and to troops and trains of the section of defense in the zone of the line of communication. Officers of all grades are responsible for the proper use and disposition of supplies issued to their organizations and for supplies temporarily in their charge.

(c) *Duties of the commander of the line of communications.* He reports directly to the commander of the field forces and he is in charge of all sanitary matters within the limits of his command.

He is responsible for maintaining a reserve of supplies on hand in his various dépôts between the maximum and minimum amounts fixed by the commander of the field forces. He furnishes the War Department a copy of a list of the stores required, showing the maximum and minimum amounts to be kept on hand, and keeps the War Department informed of the amount of funds needed for the prosecution of his work. He forwards his requisitions for supplies not procurable in the theatre of operations to the War Department or to such dépôts as the War Department may designate for furnishing particular supplies.

He prepares and enforces stringent regulations for the physical examination of officers and enlisted men, who are sick or wounded, to the end that the force in the theatre of operations suffers no depletion incident to the return to the home country of malingerers, or those who within a reasonable length of time will be able to return to duty.

(d) *Duties of the Surgeon, base group.* He acts as technical adviser of the commander of the line of communications on all matters relating to the operation of his corps within the zone of the line of communications.

(e) *Duties of the Sanitary Inspector, Line of Communications.*

His duties are:

Analogous to those of department sanitary inspectors and he will be governed by the regulations for the latter with such modifications as the different conditions demand.

(f) *Transportation.* For the evacuation of disabled to the rear it will be necessary to utilize all available transport assigned to the department, combat wagons and field train wagons when authorized by competent authority and automobiles and other impressed civilian transport.

549. The Surgeon—Line of Communications. The senior medical officer of the line of communications assigned to duty at the base is *both the surgeon, base group and the chief surgeon, line of communications.*

Title of Surgeon, Line of Communications. He is called The Surgeon, Base Group.

*Duties of Surgeon, Base Group:*1. *Advisory:*

Sanitary advisor on all sanitary tactics in the line of communications to the commanding officer of the line of communications to whom he reports directly.

Surgeon controlling directly sanitary organizations at the base, as such he reports through the assistant chief of staff, base groups, to the commanding officer of the line of communications.

2. *Administrative.*

Analogous to those of a department surgeon, and he will be governed by the regulations for the latter, with such modifications as the different conditions demand.

(a) He will direct and control personnel of the American National Red Cross on duty with the line of communications.

(b) He will decide whether personal service individually volunteered shall be accepted. (M. M. D. 537); and when accepted, he will direct how it shall be employed.

(c) He will advise appropriate measures for the shelter, supply, treatment, and transport of the sick and wounded, including suitable provisions to secure the retention of effectives at the front and for the sending of noneffectives to the rear; and will consult with the chief of staff and the heads of other staff departments in reference to the details of such measures.

(d) He will coördinate the sanitary tactics of the three groups, line of communications.

(e) He will communicate with the Surgeon General regarding arrangements for the movement of patients from the base to home territory and the provision of sanitary personnel and supplies from the zone of the interior. (See M. M. D. 552.)

(f) He will act on requisitions for sanitary supplies.

(g) He may give authority for the purchase in local markets of medical supplies immediately necessary, with the approval of the Surgeon General.

(h) He may receive voluntary contributions in money or kind for the benefit of the sick and wounded and he may expend the same as he sees fit.

(i) He may make contracts with surgeons and employ or authorize the employment of other civilians for emergency service.

(j) When battle is impending, he insures that mobile units of the line of communications are free to advance; that hospitals are cleared for new cases; that sufficient medical supplies are collected in the immediate rear of the army to meet the exigencies of combat; and that personnel available for assistance in the zone of the advance are assembled and held in readiness as far forward as practicable.

(k) He will make timely recommendations to the commander of the L. of C. regarding transportation required for medical supplies and for patients.

(l) He will render to the chief surgeon of the field army the consolidated field report of sanitary personnel and transportation and the consolidated daily field report of patients (Form 84) and the weekly noneffective curve chart. (Form 85.)

(m) He keeps records of both supplies and personnel and such abstracts and tabulations as the chief surgeon of the field army may require from time to time are made here and supplied to him.

(n) *Transfer of disabled.* One of the most important duties is careful exercise of judgment in making recommendations regarding the transfer of the disabled to the home territory in order that hospitals on the line of communications may not be burdened with patients who are permanently disabled and that soldiers who are temporarily disabled and likely to be able to rejoin their commands within a reasonable time be not sent too far to the rear.

THE BASE GROUP

550. The commander. The assistant chief of staff with the base section is charged with coordinating the work of the quartermaster, medical, engineer, ordnance, and signal base group.

All requisitions are viséd by him before being forwarded.

All sanitary supplies shipped into the base either for use of the field forces or for the troops of the line of communications are consigned to the "Surgeon" at the base.

551. A service of military railways is organized, when military operations are dependent on a railway for its supply, by the corps of Engineers.

(a) *Controlled by.*

The director of railways, who is a member of the staff of the commander of the line of communications.

(b) *Authority over.* No military officer not attached to the service of the military railways is allowed to give any orders to subordinates of the latter service or to interfere in any manner with the running of trains, except in the case of an impending attack.

552. Channels of correspondence.

After the system of supply and evacuation of sick and wounded has been fixed by the commander of the field forces, the commander of the line of communications and the assistant chief of staff of each advance section are authorized to communicate directly with the commanders whom they are ordered to supply on all detail matters relating to supply, evacuation of wounded, and maintenance of lines of information. Inversely, such commanders are authorized to communicate with the assistant chief of staff of the advance section in their immediate rear or with the commander of the line of communication on the same subjects.

553. American National Red Cross Association. The services of this association, its equipment and personnel are utilized under the immediate direction of medical officers to the greatest extent possible

in the care of sick and wounded in the service of the interior and on the line of communications.

554. The base medical supply. This is established, organized, and administered according to instructions in par. 563 and 782 to 786 inc. M. M. D.

555. The base hospital. (Capacity 500.) It is under the supervision of the surgeon, base group. It is established where necessary and will occupy buildings, if suitable ones are available. The number to be assigned is determined on the basis of the number of troops to be served and the percentage of disabled to be anticipated in the particular campaign in question.

New base hospitals may be estimated where and when they are needed to supplement the services of more advanced hospitals, or when new sites will be more convenient to handle wounded.

(a) *Duties of Commanding Officer.* Same as for commanding officer of a general hospital.

(b) *Regulations for* (M. M. D. 761). So far as adaptable the regulations for general hospitals will govern. (See M. M. D. 283 to 316.)

(c) *Reports of Patients to be transferred from Base Hospitals.* The commanding officer of the hospital will indicate under "Remarks" in his daily report made on Form 83, the number of patients who require transfer so that arrangements may be made accordingly. He should himself supervise the selection of patients for further transfer in order to keep down to the lowest possible figure the number of men lost to the Army.

(d) *Patients sent to Base Hospitals.* Received from the line of communications Base groups, or from the zone of advance through the advance group.

(e) *Classes of Patients transferred to zone of interior.* (M. M. D. 762.) Only those patients who require special treatment or whose disabilities may be regarded as permanent or chronic.

(f) *When inadequate.* (M. M. D. 759, 762.) More extensive transfer of patients to the zone of the interior must be effected. On the eve of battle the base hospitals near the front should be cleared as far as possible to make room for new patients or it may be necessary to open additional hospitals near the front or to augment those already established there.

Note. Unless otherwise provided the personnel, supplies, and equipment for the evacuation of patients from advanced base hospitals to the rear will come from the hospitals receiving them.

(g) *Formalities on closure of hospital.* Base hospitals ordered to close will dispose of their patients as directed by the surgeon, base group.

(h) *Designation of Base Hospitals.* They receive a number and add the Army Corps of which they are a part, to this is added the location. For example:

Base Hospital, No. 9, 3rd Army Corps, Pentonville, Texas.

556. The convalescent camp. These may be established in the vicinity of base hospitals of which they will be branches.

557. The contagious disease hospitals. As many, as are recognized by the base surgeon, with the authority of the commander, L. of C., as may be necessary to meet the emergency of a serious epidemic.

Note. Ordinarily cases of infectious disease occurring among troops in the theatre of operations will be cared for in the isolation wards of base or other hospitals and so far as practicable at or near the place of origin of disease. The organization of this cannot be foretold.

558. Hospital trains and trains for patients. These are run under the control of the officer in charge of the base group but general arrangements for the running of hospital trains and trains for patients will be made by the surgeon, base group.

(a) *Loading and unloading.* Details in regard to the loading and unloading of patients at railway stations will be arranged between the officers in charge of such stations and the commanding officers of the evacuation ambulance companies or hospitals which are to transfer or receive the patients.

(b) Hospital Trains are Medical Department organizations and will be provided by the War Department when required for the transportation of the sick and wounded. In cases of emergency when hospital trains are not available, ordinary trains for patients will be provided for the temporary use of the Medical Department.

(c) The general regulations governing the organization, personnel, matériel, and operation of hospital trains, trains for patients, hospital ships, ships for patients in the service of the interior will apply also to the similar medical department units on the line of communications, except that the duties performed by the Surgeon General with respect to the former will devolve in the latter case upon the surgeon, base group.

559. Casual camps for sanitary troops. These are designated for the reception, shelter, and control of sanitary troops during their stay at the base. They will, with the approval of the commanding officer of the L. of C., be established by the surgeon, base group, and are commanded by the senior medical officer on duty therein.

560. Sanitary squads. They are organized for the purpose of giving attention to sanitary matters not within the control of regimental or other military organizations at such places as may be necessary.

The personnel of such squads consists of enlisted men of the Medical Department augmented by other enlisted men and civilian laborers as needed. Each squad will be in immediate charge of a medical officer.

(a) *The function of sanitary squads* is to supervise or execute, as the case may be. The necessary measures for the sanitation of camp sites, towns or villages not occupied or garrisoned, or of such parts of the same as may be otherwise unprovided for.

Sanitary work that may be necessary for the general welfare but that can not be performed conveniently or profitably by individual

organizations. The operation of sanitary apparatus used by troops in common and not under control of any one organization.

(b) *Employment of Sanitary Squads.* They will not be employed to relieve regimental and other similar organizations of the duty of providing for the sanitation of their own camps.

561. Field laboratories. (M. M. D. 778, 779.) Location and supply will be established where most convenient for the work. A suitable building should be chosen in each case, preferably in a town provided with water and gas supply.

The technical supplies for a field laboratory are listed in M. M. D. 896. Such additional equipment will be supplied as the surgeon, base group, may deem necessary.

Traveling field laboratories may be supplied on motor trucks.

THE INTERMEDIATE GROUP

562. Rest stations. Rest stations are organized for purpose of giving temporary care and treatment to sick and wounded enroute. When on railway lines they are similar in every way to those pertaining to the service of the interior. They are manned and equipped from Red Cross Hospital columns, but in exceptional cases, when the distance between the hospitals in the zone of the advance and the advance section of the line of communications is so great that it will be necessary to establish rest stations on the route of the evacuation ambulance companies, the rest stations will usually be of a temporary character and their personnel and supplies will be provided by the evacuation ambulance companies. At such stations provision should be made for temporary but comfortable shelter, nourishing food, and readjustment of dressings or other treatment necessary to enable the patients to proceed comfortably to their destination.

ADVANCE GROUP

563. Commander of the advance group. The assistant chief of staff who is with the advance group is charged with coördinating the work of the quartermaster, medical, engineer, ordnance and signal advance groups. The operations of these groups extend to and include the refilling points of the division supply train, the evacuation points for sick and wounded, and, in certain instances, to the distributing points.

564. Evacuation points. The places at which the sick and wounded are transferred from the division to the line of communication.

565. Sanitary columns. They are the means whereby transportation, equipment, supplies, evacuation, and field hospitals, and ambulance companies, not continually required with a division, may be pushed forward when needed.

(a) The strength and composition of these columns are dependent upon the character of operations reasonably probable.

(b) The sanitary column of the line of communications includes ambulance companies and evacuation hospitals; there may also be available railway hospital trains and boats, hospital and ambulance columns, Red Cross and sections of the U. S. Army Ambulance Service.

566. The surgeon, advance group. (a) The surgeon, advance group, controls directly all sanitary units at the head of the line of communications under the supervision of the assistant chief of staff.

(b) He has general charge of the transportation of patients from the field hospitals or other units in the zone of the advance to the evacuation hospitals or other places on the line of communications prepared for their reception.

(c) During or after battles of any magnitude the transportation included in the sanitary column will usually be found greatly inadequate for the evacuation of the wounded. He will anticipate these conditions and make timely provision for obtaining the increased transportation necessary. Under competent authority, vehicles belonging to the civilian population may be impressed, and use made of the supply column of the advance section. He should direct the operation of such additional transportation until the emergency is past.

(d) He maintains close touch with the division surgeons and medical organizations at the front and makes suitable arrangements to relieve them promptly of the sick and wounded left behind.

(e) When battle is impending he will clear his evacuation hospital as far as necessary, so that room may be available for wounded from the front; he will assemble near the front his evacuation ambulance companies and one or more evacuation hospitals, and he will advance supplies to points where they may be readily available for the divisional units.

(f) *Relation of Surgeon, Advance Group to Surgeon, base group* is that of post surgeon to Dept. Surgeon. *Relation to commander of advance group*—same as post surgeon to post commander.

567. Functions. The evacuation ambulance company.

(a) On the March:

At night the company will be brought up to clear field hospitals of patients collected by the latter during the day and to take them to points on the l. of c.

(b) Before Battle:

The positions of evacuating points are fixed and communicated directly from division headquarters to the commander of the sanitary train and to the commander L. of C. and the evacuation ambulance company, which should be located as far in advance as the conditions permit, and it will usually be necessary to greatly increase the number of vehicles and bearers of the company. This increase will be provided by the officer in charge of the advance section on the recommendation of the surgeon, advance group, usually by civilian, or other transportation. In many cases the wagons going to the rear for supplies will transport the patients back to the refilling point

where they will be turned over to the wagons sent forward from the advance section.

The assignment of the disabled to the various kinds of transport (automobiles, ambulances, wagons, country carts, bearers, etc.) will be made by the commanding officer of the company according to their condition. In doubtful cases the authorities of the hospital should be called upon for necessary information.

The ambulance columns of the Red Cross and sections of the U. S. Army Ambulance Service, augment the evacuation ambulance company.

(c) During and after battle.

The company will proceed to the field hospitals which it is to evacuate, will report to the commanding officers thereof, will receive all who are to go to the rear and also receive and provide for the slightly wounded, able to walk, who report to it by proper authority from the dressing stations, the stations for slightly wounded, or other places on the field and will deliver them to designated hospitals of the L. of C. or to rest stations or hospitals at points with rail or boat connections for a transport to the base.

568. The evacuation hospital.

The function of the evacuation hospital is to replace field hospitals so that the latter may move with their divisions, or to take over their patients with the same object in view. So far as it would not interfere with this function the evacuation hospital may be used for ordinary hospital purposes on the line of communications.

Duties of an Evacuation Hospital When Opened. These are similar to those of a field hospital in combat and corresponding departments will be created. (M. M. D. 703.)

Location.

(a) The place where they are to be located will be determined by the surgeon, advance group, under the authority of his commanding officer, on a railway or navigable stream, accessible to wheeled transport and with an abundant supply of water and fuel. When suitable buildings are available they will be utilized.

(b) *Action before battle.*

All evacuation hospitals will be cleared of patients and brought as far forward as possible and will remain in readiness for opening or further advance.

(c) *Action, during battle.*

Serious cases requiring protracted treatment and all persons permanently incapacitated should be sent to the rear as soon as their condition permits transportation. It will rarely be possible to send slightly wounded back to their organizations during combat, but every opportunity should be taken to do so in order that such wounded shall not become further separated from their commands. The character of the surgical treatment to be given at evacuation hospitals during battle will hardly be more extensive than emergency opera-

tions and better preparation for transport. When few wounded are coming in and there is no probability of an early move, complete treatment may be given.

(d) *Augmentation of an Evacuation Hospital*.—Will be obtained from Red Cross Hospital Columns.

(e) *Removal of patients from an Evacuation Hospital*. Transportation will be provided by direction of the commanding officer of the advance section of the line of communications, upon the information of the commanding officer under "Remarks" in his daily report made on Form 83 of the number of patients who require transportation to the rear.

569. The advance medical supply depot supplies troops in the zone of the advance and it should not, except in emergency, be depleted by issues to evacuation hospitals, evacuation ambulance companies, and other units on the line of communications.

(a) *Quantity of stock to be kept on hand*. Maximum and minimum limits will be determined by the commander of the l. of c. on recommendations of the surgeon, base group, to whom any variation of stock above or below the prescribed limits will be reported at once with appropriate explanatory remarks. In making his recommendations the surgeon, base group, should include in the minimum quantity of supplies to be maintained at this depot at least one medical reserve unit. (M. M. D. 891.)

(b) *Replenishment of stock of an Evacuation Hospital*. From the base depot without formal requisition, in the manner provided under base supply depots. (M. M. D. 783.)

(c) *Supplies for use of an Evacuation Hospital*. Obtained on requisition, forwarded in duplicate to the surgeon, base group, who will modify them at his discretion, send one copy to the base supply dépôt for issue and return the other copy to the writer with his modifications, if any, noted thereon.

(a) *Choice of location*. Depending upon the military situation it may be established in buildings, if they are available, or under canvas; in box cars, or on motor trucks. In the latter case the prescribed stock of supplies, may, temporarily, have to be reduced to such essentials as surgical dressings, medicines, and other articles of that class. In determining the character of the articles that may be eliminated under these circumstances much will depend upon the facility with which supplies can be obtained from the base.

CHAPTER XI

SANITARY TACTICS IN THE ZONE OF THE
ADVANCE

570. **The basis of sanitary tactics in Zone of the Advance.** In the zone of the advance Sanitary Tactics is based on the division because the division is the great administrative unit and forms the model for the organization of the administrative service of smaller units operating independently. To the division alone are regularly attached ammunition, supply, sanitary, and engineer trains. Army Corps troops may be assigned to divisions for purpose of supply and the care and evacuation of their disabled. *Divisional sanitary tactics* devolves upon the personnel attached to the sanitary train, under the orders of the division surgeon in accordance with such general or specific instructions as he may receive from the division commander. *Organizational sanitary tactics* devolves upon the personnel attached to organizations smaller than a brigade, under the immediate orders of the organization commander.

571. **Responsibility for divisional sanitary tactics.** The division surgeon formulates plans, and makes recommendations to the division commander concerning sanitary tactics of the division in camp, on the march, before, during, and after battle.

572. **Duties of the division surgeon.** The Division Surgeon is responsible to division commander in two capacities:

(a) Advisory, concerning the health of the command, professional matters, etc.

(b) Administrative, concerning the detachments and units of sanitary troops on duty with the division, and American National Red Cross Units, and other voluntary aid personnel should they be authorized in exceptional cases to perform service with the division.

Note: The Division Sanitary Inspector assists the division surgeon.

(a) Inspector of the sanitary matters of the division (see sanitation page).

(b) Inspector of sanitary troops whereby he inspects and reports upon the administration of the units of the sanitary train; the efficiency; instruction; the adequacy of the medical personnel; the condition of hospitals; the character and sufficiency of medical supplies; the facilities for transporting medical supplies and the disabled; and in general all matters affecting the care, well-being, and comfort of the disabled.

Note: Duties of division surgeons and sanitary inspectors are akin to those of department surgeons and sanitary inspectors, Zone of the Interior,

B. Administrative duties.

(a) He will take action on all official papers passing through his office. The channels through which papers pertaining to the medical department go forward will be determined by the chief surgeon of the field forces according to circumstances.

(b) He will render to the chief surgeon (Field Forces), the consolidated daily report of sanitary personnel and transportation and the consolidated daily field report of patients (Form 84) and the weekly non effective curve chart (Form 85).

(c) He will see that the proper inspections are made of sanitary conditions in the division and of the sanitary troops of the division by the sanitary inspector.

(d) He will arrange for the care and disposal of the sick and wounded of the division in camps, on the march, and in battle, having in view the retention of effectives at the front and the prompt removal of non effectives to the rear.

(e) He will keep the surgeon, advance group, advised as to the probable requirements of the sanitary service of the division and as to the number of patients for whom provision will be required on the line of communications.

(f) He will keep the chief surgeon of the field forces advised as to the efficiency and requirements of the divisional sanitary service.

(g) On the march he accompanies the division commander, giving such advice and information as may be called for, and securing all information necessary concerning the disposition of troops to enable him to formulate plans for the sanitary service which these dispositions will require.

(h) When battle is imminent he will utilize all facilities available to familiarize himself with the terrain which will probably be covered and will obtain and distribute to the officers of the sanitary train such information of a general nature as will assist them to determine their course of action.

573. Plans for sanitary tactics. These are based on information accessible to division staff officers which include:

(1) *Knowledge of the enemy* which is essential to estimate the character of the encounter.

(2) *The plan of the division commander* which elaborates the tactical distribution of the elements of his command upon which must be formulated the plans of division surgeon for relief transportation, routes of evacuation, stations for hospitals, quantities of supplies, etc.

(3) *A knowledge of military tactics* which is necessary for an intelligent understanding of field orders and the location, uses, mission, and relation of the fighting elements of the command and the method of supply, under all conditions in the field.

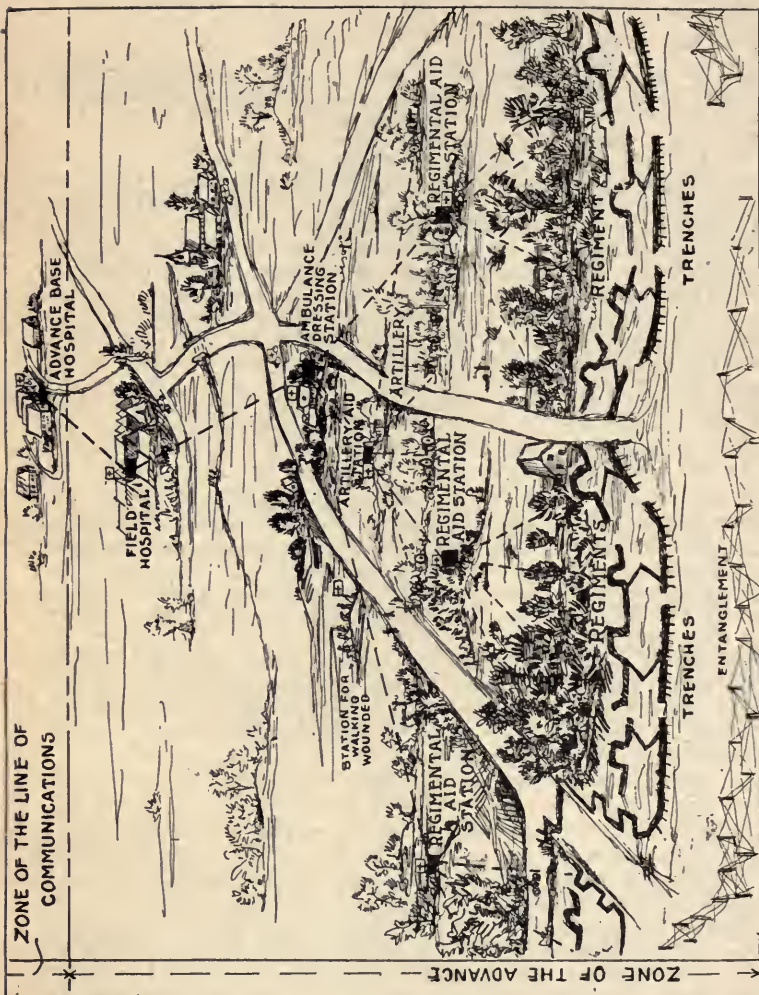


FIG. I

(4) *A knowledge of the terrain* which affords an intelligent understanding of the distribution and interdependence of elements of the command and their distances, on the ground and in time; the topography over which the troops are maneuvering, the best locations for observation, invisibility, safety from fire, accessibility; the presence of streams, ponds, or other bodies of water, forests, plains, roads and bridges, railroads, trolley lines, towns and cities, the character of slopes, of hills and valleys, and especially the range of hostile artillery.

(5) *The estimation of anticipated casualties* which is essential to the adequate ambulance service and hospital care. Casualties may be estimated at 10 per cent of the troops engaged, with the understanding that certain organizations may suffer very much heavier losses, while some may suffer less. Of the casualties, the killed may be estimated at 20 per cent; seriously wounded, 8 per cent; less seriously wounded but requiring transportation, 32 per cent; the wounded able to walk to the dressing stations or field hospitals, 40 per cent.

(6) *Co-ordination of movement and supply* which are essential and depend upon messengers on foot, carriers on horse back or auto-cycle, visible signaling, buzzer or telegraph, radio and aeroplane service.

574. Duties of the division surgeon on the march. On the march the surgeon accompanies the division commander, for the purpose of keeping accurately posted on the plans of the commander, the disposition of the troops, and the receipt of information at headquarters.

(a) He makes recommendations upon sanitary tactics and sanitary measures (see sanitation), and when called upon imparts information concerning the status and disposition of sanitary troops, transportation and supplies. He will advise the division commander as to which units of the sanitary train he considers necessary for service with the marching troops and which units may be placed under the commander of the divisional train. (When the latter units are released from the divisional train they remain under the immediate command of their senior medical officer until the division surgeon assumes control.)

575. The sanitary train on the march.

The sanitary train ordinarily marches with the division trains, under the direction of the commander of the trains, but one ambulance company usually accompanies large advance guard (marching at the rear of the reserve) and rear guards, and when out of the presence of the enemy ambulances are ordinarily ordered distributed by the division commander throughout the column, in the rear of regiments, battalions, etc. Unless otherwise ordered these ambulances join their companies at the end of the day's march or beginning of an engagement, and when full, an ambulance may join its company being replaced by another, by order of the director of ambulance companies or the company commander.

576. The camp infirmaries on the march. A camp infirmary is assigned to each brigade and marches in its rear to be ready to re-

ceive patients at once when the march ends, and a field hospital should be so located in the column of march as to permit of its being available for the reception of seriously sick and injured as soon as possible after the arrival of troops in camp. A field hospital used for this purpose will be promptly evacuated to the line of communications in order that it may accompany the division when it advances.

577. During marches in the presence of the enemy, ambulance companies are kept intact. It may be advisable to assign one or more of these companies to a position in the column of the combatant troops, but any further dispersion is inadvisable. When combat is imminent and when so ordered by the column commander, the ambulance companies fall out of the column and report to the director of ambulance companies for orders.

Note: No person, except the proper medical officers or the officers, noncommissioned officers, and privates of the ambulance service, or such persons as may be specially assigned by competent military authority to duty therewith, will be permitted to take or accompany sick or injured men to the rear, either on the march or elsewhere.

578. Before a battle. The division surgeon learns the plans of the commanding general, the general situation and the special situation, and as soon as practicable embodies his recommendations in the form of an order to be included as Par. 4 of the field order. This paragraph should contain information of the location of the station for slightly (walking) wounded, and details affecting the sanitary train.

(a) EXAMPLE

Field Orders {	1st Division,
No. 44 }	Littlestown,
	Sept. 15, 1:00 P. M.

1. Our advance guard has driven hostile detachments from Enemy trenches have been located on and on near The hostile cavalry brigade is reported massed at..... At noon our 2d and 3d divisions were preparing to attack west of Alloway Creek.

2. This division will attack east of Alloway Creek enveloping hostile left. March conditions cease.

3. (Gives distribution of our forces for the coming attack.)

4. *Station for slightly wounded; knoll 726, 3000 yds. southeast of Littlestown on the Baltimore turnpike. Ambulance Company No. 6 to knoll 726, remaining ambulance companies and one field hospital will assemble south of knoll 766 one mile northeast of Hunthorse. Ammunition distributing stations at _____ and at _____.*

5. Division headquarters at K house.

A
Maj. Gen.

(b) *Points to be noted.*

Paragraph one gives the position and strength of the enemy and the form of his opposition, defensive, offensive, or offensive-defensive.

Paragraph two gives the plan of the Commanding General for attack, and says "march conditions cease," which means that automatically ambulances, camp infirmaries, and field hospitals in the column of march fall out and join the sanitary train, which is released from control of the commander of the trains and comes under the orders of the commanding general or division surgeon.

Paragraph three gives the distribution of our forces.

These paragraphs tell the division surgeon the nature of the prospective engagement and the troops engaged, whereon he bases his estimate of total number of expected casualties, the probable area of most casualties, also the time in the engagement when the greatest number of casualties will occur.

With these ideas he plans the distribution of the elements of the sanitary train in paragraph 4, bearing his mission in mind which is to remove the greatest number of the disabled as rapidly from the first aid stations as possible with the fewest and shortest ambulance trips and deliver them at the line of communications.

It will be noted that paragraph 4 is silent concerning four camp infirmaries and 3 field hospitals. This means that they remain where they are, to wit, with the divisional trains. No dressing stations are announced as their positions will depend entirely upon where they may be needed during the fight.

(c) *Station for slightly wounded.* When combat is imminent, the station for slightly wounded is announced in division orders, par. 4, to relieve dressing stations and field hospitals of the wounded who can walk and require but little attention. It is to this station that all disabled men able to walk are ordered to report. They are furnished with a tag showing the orders given them by the medical officer authorizing their proceeding to this station. It is operated by the personnel of the sanitary train detailed for the purpose. It is operated by the personnel of the sanitary train detailed for the purpose. It is conspicuously marked so that it can be readily found.

(d) *Information as to sanitary trains.* Is given by the division surgeon to the directors as soon as he has formulated definite plans.

579. Preparation for an assault from trenches. In trench warfare when intervening territory is stubbornly contested by both forces, advance is relatively slow, combat takes on a more deliberate and stubborn aspect. Troops are assigned to definite sections of trench and those chosen for the expected assault are instructed by repeated rehearsals in the precise duties and portions of each man. Under such circumstances it is possible to place the sanitary train in relatively exact tactical positions prior to the assault, assigning field hospitals to brigade sectors of the line and stationing the transportation section of the Ambulance companies with the field hospitals and their dressing station section as near to brigade sectors as possible. Evacuation hospitals may be brought up to augment the division hospitals

and motor ambulance columns may be used to convey disabled to railroad stations for embarkation on trains.

580. During offensive combat.

The elements of the sanitary train are placed in positions of readiness indicated by the plans of the commander and as soon as definite information is received of the fortunes of the battle dressing stations are ordered to points most accessible to the trench and sheltered as far as the terrain permits from overshots or indirect fire from the enemy, and field hospitals are concentrated and opened at positions along the line of travel of the greatest number of disabled. The chief surgeon of the advance group is notified of the expected number of disabled and the route of transfer, ambulance, horse or motor, civilian vehicles, boats or trains. Supplies are called for from him which are dispatched to the front by divisional ambulances going to the front.

581. During defensive combat.

Entrenched positions allow of definite prearranged dispositions of adequate elements of the sanitary train to points in rear of where the maximum assault is anticipated.

Supplies are brought forward in anticipated quantities and camp infirmaries supplement regimental organizations most in need of assistance.

582. After an engagement. The division surgeon will immediately report losses in medical personnel to the division commander and will take proper measures to replace the supplies and equipment of the sanitary troops of the division. He will free field hospitals of patients as promptly as possible in order that they may be ready for another engagement or a forward movement.

The senior medical officer of a brigade or detachment acting independently will perform for the command such of the duties of a division surgeon as the circumstances may render necessary.

The dead are buried by details announced from division headquarters. The division sanitary inspector should be in charge of the work.

583. The station for slightly wounded. The station for walking wounded is a transient divisional organization on the battle field; it has no permanent personnel or definitely prescribed equipment.

(a) *The Personnel.* Usually one medical officer, two noncommissioned officers, and eight privates, will be detached from such unit of the sanitary train as the division surgeon may elect. In some instances it may be practicable to utilize personnel sent forward from the line of communications.

(b) *The Equipment of the station.* One of the camp infirmaries of the division may be utilized, or a medical and surgical chest and such other supplies as are necessary may be temporarily detached from one of the field hospitals.

(c) *The functions of the station* are (1) to afford a place where men who are unable to accompany their units into combat may be assembled; (2) to relieve dressing stations and field hospitals of the congestion incident to the presence of the slightly wounded who can walk and who require but little attention.

(d) *Time of opening.* The station (usually one for each division) is established when combat is imminent.

(e) *Location of station.* It should preferably be located on the route over which the troops have advanced, as this route is the one the disabled are most likely to follow in working their way to the rear. In any case it should be so conspicuously marked that it can be found readily.

(f) *Preparations at this station.* A tent should be erected, if no building is available, where dressings may be applied or readjusted and arrangements made for the preparation of simple nourishment. Diagnosis tags should be attached to all wounded not already tagged. The duplicates of the tags will be disposed of as directed in paragraph 571, Manual Medical Department. A list of sick and wounded will be prepared as prescribed in paragraph 580.

(g) *Evacuation of wounded from station.* As soon as possible wounded at the station who are not able to return to their commands will be collected into groups and directed to the rear in charge of one of their number.

Minor cases requiring no further treatment or only slight treatment will, however, be directed to return to their organizations, and the fact that such directions have been given them will be noted on their diagnosis tags. Men who arrive at the station without authority and are able to do duty will be turned over to the provost guard for return to their organizations.

Should any of the sick or wounded be found too much exhausted or too badly hurt to go farther afoot, the commanding officer of the station will report them to the nearest field hospital.

(h) *Closing the Station.* Upon the conclusion of the engagement the personnel and equipment of the station will be disposed of as directed by the division surgeon.

584. The commander of the sanitary train.

(a) The division surgeon or in his absence the senior medical officer of the attached elements who, commands the train, upon its release from the control of the commander of trains, operates it in accordance with orders or instructions received from division headquarters.

(b) When divided to accompany a division marching by two roads or when assigned by division orders with line organizations or trains away from the division the units of the sanitary train are subject to the general control of the senior line officer present with the immediate command which they accompany and the senior medical officer present with the units will report them to the line officer in command without further orders and will receive his instructions in such matters as the conduct of the march and the location and security

of the units in camp. Units so separated from headquarters are not regarded as detached unless they are specifically ordered to report to the commander of the line troops for duty.

585. Camp infirmaries. Infirmaries are set up at convenient points by order of the division surgeon and operated by the sanitary personnel attached to the organizations to which the infirmary serves. The senior medical officer of the units served by the infirmary assumes charge of the same and is authorized to call directly on the other organizations for their proportionate share of medical officers and sanitary personnel for the infirmary service. The sergeant, medical department, detailed with the infirmary remains with it in charge of the equipment. The infirmary is used for sick call and to furnish dispensary service to one or more organizations.

It is essential that cases of a chronic type be delivered to the line of communications at once to prevent immobilization of camp infirmaries and Field Hospitals.

Should immobilization occur other units must take their places to continue with the division.

586. Sanitary troops with outposts. It is generally unnecessary to attach any portion of the sanitary train to an outpost, carried in the sanitary combat train will as a rule be sufficient.

If necessary, dressing stations may be established in convenient location to the rear.

The field trains of troops on outpost duty generally join their organization; if an engagement is probable, they may be held in rear.

587. The director of ambulance companies for each division. A medical officer of the grade of major is designated and there is assigned under him one sergeant and one private first class or private, Med. Dept., both mounted. The relation of the D. of A. C. to the division surgeon and to the ambulance companies is similar to that of a major of the line to the colonel of his regiment and to the companies of his battalion. He maintains no office or record but communications from the division surgeon to the ambulance companies and vice versa are sent through him for his information. He is held responsible that all the companies have their regulation allowance of personnel and equipment, that the personnel are properly instructed, and the equipment is in good condition, and will take the necessary measures to correct any deficiencies found therein.

(a) *On the march.* He ordinarily accompanies one of the ambulance companies on duty with the marching troops and will superintend the ambulance service of the march. He will keep the division surgeon advised as to where communications will reach him.

(b) *During and immediately after combat,* he supervises the removal of the wounded from the aid stations (and in emergency from the front) and their care and treatment enroute, via the dressing stations, to the field hospitals. His activities cover, therefore, the entire zone between the firing line and the field hospitals, with the terrain with which he should make himself familiar, and will proceed from point

to point thereof as his presence may be required. As far as practicable he will keep the division surgeon apprised of his movements.

(c) He will, under the division surgeon's authority, direct the opening of dressing stations at the places decided upon, and as may be necessary during the battle, and their closing and the reassembling of the several units for movement with the division as soon as practicable after its conclusion.

(d) He commands the camp infirmaries of the division.

588. The ambulance company. (1) *The commanding officer of the ambulance company* is under the immediate orders of the director of ambulance companies, when there is one; otherwise, he is under the immediate orders of the division surgeon.

(2) *The function of the ambulance company* is to collect the sick and wounded to afford them temporary care and treatment and to transport them to the next sanitary unit in the rear.

(a) In combat the company operates in two parts. The first establishes and operates a dressing station and collects the wounded thereat, as near the line of regimental aid stations as possible, the second operates the wheeled transportation in evacuating the wounded. When the field hospitals have not been set up and when sanitary columns or railway hospital trains of the line of communications are reasonably accessible, ambulance companies transport the wounded directly to them.

(b) *In camp.* The ambulance companies operate an ambulance service between the camp infirmaries and the field or other hospitals.

(c) *On the march* the ambulances are distributed among the marching troops, usually one to each regiment, for the purpose of supplying transportation to those who become unable to march.

589. Dressing stations. These stations are the places where all wounded unable to walk are collected from regimental aid stations by bearers of ambulance companies. The equipment of dressing stations is more elaborate than that of the regimental aid station. It provides light nourishment and stimulants for the wounded and affords facilities for more elaborate dressings and for emergency surgery.

As soon as the dressing station is opened its bearers under the direction of a medical officer proceed to the front.

(a) They direct wounded who are able to walk, and transport other wounded to the dressing station. When practicable they also augment the regimental medical personnel in the care and removal of the wounded from points in advance.

(b) The commanding officer of the company with the dressing station personnel prepares to receive patients. When possible for wheeled transportation to reach the dressing station, a message should be sent to the officer in charge of the ambulance train directing him to report at the station with the ambulances, and regimental surgeons are notified of the location of the dressing station.

(c) *The work of the dressing station* is carried on under the following departments:

Dispensary.

Kitchen.

Receiving and Forwarding.

Slightly wounded.

Seriously wounded.

All wounded will pass through the receiving and forwarding department. Those whose injuries are trivial, treatment and return to their units, the fact that directions have been given them will be noted on the diagnosis tags. Other slightly wounded, able to work, will after the treatment, be immediately directed to the rear in command of their highest ranking officer or soldier.

(d) *Operations at the dressing station.* Only such operations will be performed as may be immediately required to save life or to render the patients fit for further transportation. Permanent occlusive dressings may be applied if time permits. Tetanus antitoxin is given in all cases of wounds; to wounded for whom transportation is available should be delayed at the dressing station.

(e) *Records at dressing station.* A memorandum showing the number of patients received and their disposition will be kept in the receiving and forwarding department. Diagnosis tags should be applied to all wounded not previously tagged and supplemental entries made on tags as required.

(f) *The ambulances and wagons* remain farther to the rear than the dressing station (usually at a place in immediate communication with division headquarters). Ambulances must reach the station as early as possible even at the risk of losses. As soon as the dressing station is established and the location of the field hospital is determined, a safe route for the ambulance service between these two establishments is sought, and, when found the ambulances, advance to begin the removal of wounded from the dressing station. The wagons of the ambulance company, carrying reserve dressings, may remain at a field hospital, whence the supplies may be sent forward by ambulances returning to the dressing station.

(g) *When the ambulances are insufficient* the division surgeon should request the division commander to permit use of part or all of the empty division transportation on its return from the front. He also obtains one or more ambulance sections or columns from the advance base.

(h) *Handling wounded.* Wounded should be handled or otherwise disturbed as little as possible during transportation to the rear. No wounded man once placed on a litter should be removed from it without evident necessity until it reaches the field hospital.

(i) *Authority to close a dressing station or to move it.* This ordinarily obtained from the division surgeon, nevertheless under exceptional circumstances, when communication with the division surgeon is interrupted, the director of the ambulance companies may, if he deems the emergency requires it, close or move the station at discretion. The division surgeon will be notified as soon as possible.

(j) *Capture of dressing station.* Should it be impossible to evacuate the wounded at a dressing station before it is closed or moved, by reason of retreat or otherwise, the commanding officer of the ambulance companies. Their position must be accessible both number and condition, sufficient medical personnel and supplies to provide for their immediate necessities, and will advance or withdraw with the division the remainder of the personnel and equipment.

590. The director of hospitals. (a) The director of field hospitals is immediately under the division surgeon and is the latter's executive in respect to the field hospitals of the division.

(b) He will ordinarily accompany the field hospital in advance on the march and remain with it in camp. He will keep the division surgeon informed of his movement.

(c) He should maintain communication with $\left\{ \begin{array}{l} \text{the director of} \\ \text{ambulance companies} \end{array} \right\}$ $\left\{ \begin{array}{l} \text{the director of} \\ \text{the surgeon ad-} \end{array} \right\}$ to make suitable arrangements for the removal of patients from the front, to the rear.

591. The commanding officer of the field hospital is under the immediate orders of the director of field hospitals, when there is one; otherwise he is under the immediate orders of the division surgeon.

592. Tactics of field hospital companies. They are set up when the conditions so warrant ordinarily some 3 or 4 miles from the battle field, and are the places to which the wounded are transported by ambulance companies. Their position must be one accessible both from the front and rear and where good water is available. Field hospitals are not set up when the sick or wounded can be turned over conveniently to elements of the sanitary column or railway hospital trains of the line of communications. Canvas is pitched only when suitable buildings are not available.

(a) The equipment of field hospitals, while more elaborate than that of dressing stations and while providing canvas for protection of the wounded from the weather and facilitates for more extended surgical work, is nevertheless limited to providing necessities for the sick and wounded pending their evacuation to the rear by the line of communications.

(b) *The function of the field hospitals on the field.* They keep in touch with the combatant organizations and to provide shelter and such care and treatment as are practicable for the sick and wounded of the division until the sanitary service of the line of communications can take charge of them. A field hospital can meet these requirements only when it is relieved so promptly by the sanitary units in the rear that its mobility is not interfered with. Prompt evacuation of the sick and wounded is necessary also to secure for them the facilities for treatment and the comforts which are available on the line of communications.

(a) Their equipment therefore is limited to those things necessary to provide temporary shelter, nourishment, and emergency

treatment only for patients enroute to the rear. No beds or cots are provided; only straw over which blankets are spread.

(b) *On the march and in temporary camps*, the field hospitals are the nightly collecting points for the divisional sick and injured who are unable to continue the march. Such patients should return to duty or be sent back to the line of communications or to a local hospital in the morning before resuming the march. As far as practicable in each division only one field hospital at a time will be used in this service, leaving the others entirely free of patients. Only so much of the equipment should be unpacked as is required to care properly for the patients actually in the hospital and their necessary attendants who are to remain when the division moves on. The number of personnel detailed to remain will be as small as possible.

593. Patients left behind.

(a) The equipment which has not been unpacked and the personnel who have not been detailed to remain with the patients will move with the division in the morning.

(b) Every effort will be made by the division surgeon to dispose of the patients left behind. Should unusual delay in turning them over to the medical service of the line of communications supervene, temporary provision for them should be arranged in civil hospitals of the locality or otherwise as may be most practicable until the medical units of the line of communications can take charge of them.

(c) As soon as the patients are disposed of, the personnel detailed for the temporary care of such patients will immediately rejoin the hospital.

594. **Tactics in combat.** The localities of the field hospitals and the number to be opened will be determined by the division surgeon acting under the instruction of the division commander. The director of field hospitals will supervise their opening, giving the necessary orders therefore to the commanders of the field hospitals. He will report their opening to the division surgeon.

Location. It is desirable that they be centrally located and beyond the zone of conflict (3 or 4 miles behind the dressing stations) where they may be easily seen and reached yet not be in the way of troops and trains. (a) An ample supply of good water is necessary, and suitable buildings are of great advantage. Such buildings should be utilized first, and only so much tentage be put up as required.

(b) If the enemy retires, field hospitals will be established, if possible, near the dressing stations, having the greatest number of wounded, or it may be moved forward under the direction of the division surgeon to replace a dressing station and to take over the patients.

The time when field hospitals should open will be communicated by the division surgeon to the director of field hospitals, should there be one, or, there being none, to the commanding officers of the hospitals concerned.

(c) *Number to be opened.* Field hospitals should not be set up until the necessity for them is apparent. If the wounded can be evacuated

directly to the line of communications, no field hospitals will be opened.

(d) *A field hospital establishes the following departments:*

Dispensary
Kitchen
Receiving and Forwarding
Slightly wounded
Seriously wounded
Operating room
Mortuary.

(e) The wounded, able to walk, will be directed to the rear as the circumstances may indicate.

(f) Record of the wounded will be made at the receiving and forwarding department.

(g) *Surgical treatment at the field hospitals* should be emergency only and to fit patients for transportation to the rear. Many extensive dressings, will however, be required, tetanus antitoxin should be given in every case to every wounded man. Patients should be fed, if practicable before being sent to the rear.

(h) *Evacuation of the wounded.* Every opportunity should be taken to transport the wounded to the rear.

If by reason of retreat or otherwise a field hospital is required to move before it can evacuate its patients, its commanding officer will take action to see that adequate attendants remain with the wounded.

(i) *Immobilization from over crowding.* When field hospitals become crowded with wounded which they cannot dispose of the division surgeon may be compelled to concentrate all wounded in one or two field hospitals so as to free the others for an advance. The hospitals left behind should be cleared as soon as possible, in order that they may rejoin their division.

When no adequate provision is made for the evacuation of the sick and wounded and a field hospital becomes the nucleus around which a camp hospital is developed, it becomes an immobile unit, and, if the troops to which it is attached should move, another field hospital will be required to accompany them.

(j) *Report of the opening, moving, and closing of field hospitals* is made through the director to the division surgeon, who will report the same when necessary to the surgeon of the advance group.

REGIMENTAL SANITARY TACTICS

Sanitary troops on duty with line organization smaller than a brigade.

595. Duties of regimental surgeon.

(a) He commands the sanitary troops on duty with the organization.

(b) He is the advisor of the organization commander in medical and sanitary matters and, to the extent of his authority, is responsible for the execution of sanitary measures in connection with the organization.

(c) He provides care and treatment for the disabled and is responsible for the efficient performance of the entire sanitary service of the organization.

(d) He makes such sanitary inspections as may be necessary and supervises all sanitary proceedings necessary to preserve the health of the command.

(e) He instructs the troops in personal hygiene and first aid.

(f) He trains his subordinates in all departments of field sanitary work.

(g) He makes timely requisition for necessary supplies and equipment.

596. When an ambulance disposition of patients on the march is filled. It may fall out and join its company in the rear of the column, and another ambulance take its place; or the ambulance may remain with the regiment, and men requiring transportation may be given diagnosis tags authorizing their transportation by the ambulance company in the rear. In the latter case the men fall out and report to the commander of the ambulance company for transportation.

The arms, personal equipment, and clothing of a soldier who falls out are taken with him in the ambulance. The horse, saber, and horse equipment of a soldier admitted to the ambulance or otherwise separated from his organization because of disability taken back to the troops by the noncommissioned officer who accompanied him.

597. Disposition of patients upon halting for the night. All but the trivial cases are taken in charge by a field hospital, or are sent to the rear. It may be necessary to leave them under shelter in houses, if practicable with the necessary food and attendants until taken in charge by sanitary troops from the line of communications.

598. Duties of the surgeon on the march. To better handle the situation he distributes his personnel equally to the 3 battalions; which they will follow, the ambulance at the rear and the sanitary combat, train (pack mule) marches with the regimental combat train.

(a) Experience has shown that the surgeon should begin the march riding with the regimental staff to receive information and instruction from the commander. But at the first halt he should ride to the rear of the column and there remain until the termination of the march riding forward to the head of the column at each halt, and allowing the regiment to pass him on the resumption of the march.

By pursuing this method he is at all times perfectly acquainted with the condition of the troops, the amount of straggling, the number of disabled and the effect of the march on the troops. All of which he can at once impart to the commander.

599. Before combat. Orders are given to assembled Det. Med. Corps and Hand Section, Hdqrs. Co. —. After reconnaissance by surgeon for location of 1st Aid Station, and after receiving the regimental combat order and time from the Adjutant. Band Section to report with litters and ambulance Boxes Surgical dressings from the ammunition wagons.

(a) *The surgeon then gives the following orders:*

Time: Set your watches at —

1. Information of enemy.

Information our troops..(a) Location dressing stations.

(b) Location station slightly wounded.
(walking wounded)

2. Plan. "We attack at" or "We signal from"

"We take a position in readiness at"
or "We will establish Regt. Aid Station at....."

(a) Route to Regt. Aid Station and order of march.

(b) Details for personnel reestablishment 1st Aid Station.

A. Orders to Officers.

B. Orders to litter bearers.

C. Orders re preparation First Aid Station.

(a) Men to pitch tent.

(b) Men to procure wood and water.

(c) Men to procure field desk.

D. Horseholder—mounts of officers and men.

E. Issue of dressings to litter bearers from boxes, surgical dressing.

F. Messenger to dressing station to give location of Aid Station and act as agent of communication with dressing station.

3. I will be.....The Division Surgeon will be.....

Any Questions? .

(b) *With a mounted command.* A first aid station is not practicable with a mounted command. A mere halt when attention to the disabled and use of supplies carried in the saddle bags may be the nearest approach to a first aid station. Patients are put on their mounts which are led. Those unable to ride must be left. The pack-mule cannot be expected to keep up with cavalry except in column.

600. In trench fighting first aid stations are established in dugouts in the scheme of trenches and may be as primitive or elaborate as the system of field fortifications is hasty or approaches the conditions of a siege.

A fire swept zone is practically impassable to litter bearers or first aid ministration during long periods since even at night illuminating rockets light up the scene on which all moving objects are at once targets for machine gun fire. We therefore put medical officers in the second line trenches and keep litter bearers moving between fire trenches and regimental aid stations back of the trenches where medical officers work to best advantage and ambulance companies may come forward to transport or coöperate with dressing stations.

601. When troops are advancing. The wounded will be treated where met and the sanitary personnel will pause, only so long as is necessary to give appropriate first aid. A regimental aid station is established and operated when the movement of the organization is justified by the number of wounded.

(a) In the absence of medical assistance, the wounded apply their first aid packets, if practicable. With this exception the care of the wounded devolves upon the sanitary troops aided by the bandsmen and no combatant, unless authorized, is permitted to take or accompany the sick or injured to the rear.

(b) In the absence of litter bearers from ambulance companies they transport the severely wounded to the dressing station but *no one* will go farther to the rear than the aid station without orders from the surgeon.

(c) Diagnosis tags must be carefully made out and attached to all disabled and dead.

(d) *Arms and equipment of disabled*, should accompany them either to the line of communications or on return to their commands. It may prove feasible to turn it in to the combat train of the regiment.

602. After combat. Commanders organize a thorough search of the battle field in their vicinity for the wounded and assist in their protection and removal. The dead are collected by details from the line as soon as practicable after the battle and disposed of as the commander directs under the immediate supervision of medical officer.

(a) One identification tag is removed, and one is left on, the bodies when interred or otherwise disposed of. Tags found on the bodies of the enemy's dead and the duplicate of our own dead are turned over to the medical officer who witnesses the interment. Later they are sent to the Division Surgeon.

(b) In case of retirement, such portion of the sanitary personnel as is required will remain under the protection of the Red Cross flag, with the disabled unless captured however, the regimental sanitary detachment should retire with the regiment.

The wounded will immediately receive treatment according to the humanity of their captors whether accompanied by sanitary personnel or not it is unwise to further deplete an already small detachment.

(c) The surgeon replenishes his supplies from the nearest ambulance company and his equipment from the Division Quartermaster and Ordnance Officer and makes the reports called for.

603. Method of obtaining sanitary supplies in the field. Supplies furnished by the Medical Department for troops at the front are ordinarily obtained from the supply depot at the head of the line of communications on requisitions approved by the division surgeon. Each sanitary formation may make its own requisition, and its supplies may be sent forward from the advance section to the refilling points where the transportation furnished by the line of communications turns over the supplies to the transportation sent back from the divisional organizations. The stream of supplies coming forward consisting of rations, clothing, and ammunition is constant, an ample opportunity is afforded to bring up the articles required by the sanitary service with the other supplies. When found to be more convenient the regimental sanitary supplies may be replenished from

camp infirmaries or from the supplies by ambulance companies these latter making requisitions for the supplies with which they require. The supply depot at the advance section draws its supplies from the depot at the base, the stock of which is automatically maintained by the service of interior.

604. Method of sanitary supply in combat. Expenditures of surgical dressings and similar articles from the equipment of troops on the line are normally replenished from the reserve supplies of the nearest ambulance company or camp infirmary. No formal requisitions, invoices or receipts will be required.

(a) *In emergencies*, the division surgeon may authorize the transfer of supplies between other sanitary formations. If the supplies so transferred are nonexpendable, invoices and receipts will be executed and forwarded in the usual manner.

(b) *Blank forms* for the use of troops in the theater of operations will be obtained as provided in Army Regulations. An emergency reserve Medical Department forms has been included in the supplies furnished division surgeons.

Supply Depots on the line of communications obtain their supplies from the base.

(c) *Requisitions*, with the exceptions noted in the preceding paragraph, all medical supplies for troops in the theater of operations will be required for on emergency special requisitions. These requisitions will be made in duplicate. Those from divisional troops will be forwarded to the division surgeon. This officer will modify them at his discretion, and if the requisition, as approved, is within the limits of the prescribed allowances for the organization making it, the original will be forwarded to the most convenient depot for issue. If the requisition as approved calls for articles in excess of the prescribed allowances, it will be forwarded to the surgeon, base group, for his action. Requisitions from sanitary formations on the line of communications will be forwarded through medical channels to the surgeon, base group, who will modify them at his discretion and forward the original to the most convenient dépôt for issue. In all cases the duplicate copy of the requisition will be returned to the office of origin with modifications, if any, noted thereon.

In emergencies medical supplies may be issued to evacuation ambulance companies and evacuation hospitals on requisitions approved by the surgeon, advance group.

Sanitary formations in the service of the interior obtain their medical supplies as prescribed for time of peace.

(d) *Transportation*. Medical and other supplies for the use of the sick and wounded are transported, as far as possible, by the Medical Department with its own transportation. Supplies which cannot be thus transported are invoiced to the Quartermaster Corps for transportation, and their shipment is expedited as much as possible, ammunition and rations, alone, as a rule, having precedence. When necessary, members of the Hospital Corps are detailed to accompany medical property.

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